REPORT OF THE WORKSHOP ON APPLIED NUTRITION TRAINING

HELD AT NEW DELHI

From February 28 to March 2, 1966

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GOVERNMENT OF INDIA

MINISTRY OF FOOD, AGRICULTURE, COMMUNITY DEVELOPMENT AND COOPERATION

(Department of Community Development)

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REPORT OF THE WORKSHOP ON APPLIED NUTRITION TRAINING HELD AT NEW DELHI FROM FEBRUARY 28 TO MARCH 2, 1966

At its meeting held on 7th January, 1966, the Coordination Committee for the Applied Nutrition Programme directed that the Sub-Committee on Training should carry out a comprehensive review of the various aspects of training under the A.N.P. The Training Sub-Committee, in turn, set up a Working Group to undertake this task. As a first step, the Working Group decided to convene a Workshop with the following objectives :—

(*a*) to make an assessment of the impact of the *ad hoc* training so far organised under the Applied Nutrition Programme ;

(*b*) to suggest measures for improving the *ad hoc* training programme from the point of view of coverage, content, teaching methods, training institutions and arrangements for supervision and evaluation ; and

(*c*) to examine the nutrition content in the present training of Gram Sevaks, Gram Sevikas, Mukhya Sevikas and Instructors in the training centres and, if necessary, suggest measures for strengthening the same.

It was decided by the Working Group that the question of strengthening the nutrition content in the basic training of school teachers, medical and para-medical personnel, as well as the wider problem of nutrition education might be gone into separately.

2. Accordingly, a Workshop was organised at New Delhi on February 28, March 1 and 2 ; the list of participants may be seen at *Annexe I.* The list of issues and the background papers placed before the Workshop, will be found at the end of the Report.

3. The conclusions and recommendations of the Workshop are set out in the paragraphs which follow.

4. *Assessment of impact.*—The significant increase in the number of kitchen gardens and poultry units in the blocks where the Applied Nutrition Programme has been in operation for some time, shows clearly that there is an increased awareness of nutritional problems in the rural areas. The training, which was organised as an integral component of Applied Nutrition Programme has, without doubt, contributed to bring about a heightened consciousness of the need to improve the nutritional quality in the human food consumption. The progress in the training at the field level was, inevitably, slow in the beginning ; several initial problems had to be overcome and experience gained. We are now past this stage and it should be possible to organise the training programme at an accelerated pace in the newer blocks. While this is encouraging, some of the evaluation reports as well as field experience indicate that the training programme requires strengthening in certain respects as indicated below :—

(*a*) There is, first of all, need to define clearly the job responsibilities of each functionary in the Applied Nutrition Programme, so that the training could be designed to provide appropriate functional knowledge and skills and its impact could be evaluated more meaningfully.

(*b*) When the initial set of syllabi was drawn up in 1962, the Training Sub-Committee had made it clear that the syllabi were intended to serve as guide lines only and that the States should adopt them according to local conditions and requirements. This seems to have been lost sight of at times, with the result that the training tended occasionally to be out of step with the field conditions.

(*c*) There is a general need to simplify the syllabi to suit more appropriately the calibre and the functions of the different categories of trainees ; in some cases, the present syllabi are also excessively heavy in relation to the duration of the courses.

(*d*) It has been the common experience that, while institutional training is carried out in a relatively systematic manner, the quality of training imparted in camps organised within the blocks is rather uneven. Considering the number of persons involved, the duration and the type of training, it would not be possible wholly to dispense with non-institutional training ; but it is desirable to keep it to the minimum.

5. *Nutrition in basic training.*—The long-term approach to make the elected leaders and officials nutrition-minded would be to make the training in applied nutrition an integral part of the basic training, in all cases where such training is organised. This has already been done, for instance, in the case of Mukhya Sevikas and Gram Sevikas ; there is a comprehensive coverage of the various aspects of nutrition in their pre-service or basic training. This approach has to be extended to other basic training courses also. Indeed, it is imperative that proliferation of courses is avoided. An integrated scheme of training, which keeps the variety of training courses to the minimum, not only reduces the number of occasions when field workers have to be drawn away from their jobs, but also helps to make the training more effective, by enabling the trainees to get a total view of their roles and responsibilities. Thus teaching of nutrition can be made an integral part of the general training courses of youth workers and associate women workers.

6. While it is agreed that the topic of nutrition has to be built into the basic training, wherever possible, it will take some time before persons who have received such integrated training, will be available for service on the field. It is, therefore, inevitable that special training under the Applied Nutrition Programme has to continue for some time to come.

7. *Coverage.*—In 1962, the Training Sub-Committee listed 22 categories of officials and non-officials who, it was considered, needed training under Applied Nutrition Programme, as they were either directly concerned with the implementation of the programme or held leadership positions in the rural community. All of them, as the experience of the last few years has shown, should continue to be included for purposes of Applied Nutrition Programme training ; some re-grouping could, however, be done, as indicated later to reduce slightly the variety of training courses. In addition, the following classes of persons may be included in the Applied Nutrition Training Programme :—

(*i*) *State Level Officers* : It is apparent that, unless there is a proper understanding and appreciation of the Applied Nutrition Programme among the concerned Heads of Departments and other senior officers at the State level, adequate support and

encouragement might not be forthcoming to those who operate at the ground level. It would be useful, therefore, to hold a seminar for two to three days for the senior officers ; where Applied Nutrition Programme is being taken up for the first time, the seminar could be arranged preferably just before the implementation of the programme is actually started. This apart, it would be useful to arrange inter-State study tours for the State Nutrition Officer and one or two other State level Officers directly responsible for the operation of the programme, so that they might benefit from the experience of other States.

(*ii*) *District Information Officers* : Purposeful and imaginative publicity is quite essential in the Applied Nutrition Programme. It is necessary, therefore, that the District Information Officers should be suitably oriented.

(*iii*) *Sub-Divisional Officers* : In States where the Sub-Divisional Officers are connected with Applied Nutrition Programme, they might be included in the training programme.

(*iv*) *Instructors of Gram Sevak and Gram Sevika Training Centres, Orientation Study Centres, Social Education Organisers Training Centres and Mukhya Sevikas Training Centres* : In view of the proposal made earlier that teaching of nutrition, should become a normal feature of the training at these institutions, it is necessary that all the Instructors are oriented to the Applied Nutrition Programme. Therefore, while Public Health Instructors and Nutrition Instructresses would continue to receive more intensive nutrition training of longer duration, the other Instructors at these training centres might be given training in the two weeks' courses.

(*v*) *Sub-Deputy Inspectors and Inspectresses' Centres* : The involvement of the school and the school-going children is basic to the Applied Nutrition Programme. The Sub-Deputy Inspectors and Inspectresses of Schools (and Corresponding Officers, by whatever designation they are described) must, therefore, be included in the training under Applied Nutrition Programme.

(*vi*) *Lady Teachers* : Lady teachers are effective disseminators of new knowledge and information among women and children in the rural areas; it is essential that all of them are given training in Applied Nutrition Programme.

(*vii*) *Bal Sevikas, Pre-school teachers and school mothers* : Here again, the need for Applied Nutrition Programme Training is clear, as these persons work with children, who form nutritionally, the most vulnerable group in the community.

(*viii*) *Members of the Agricultural Production Committees of the Panchayat Samitis and Village Panchayats*: At present, the training covers only the Chairmen of these Committees. It would be useful to include four or five members also.

(*ix*) *Workers of Voluntary Organisations* : Where voluntary organisations undertake Applied Nutrition Programme activities within the framework of the subsidiary plans of operations,

their workers might be allowed to join appropriate training courses.

(*x*) *Peace Corps Volunteers*: A considerable number of Peace Corps Volunteers are likely to take part in the Applied Nutrition Programme. They might be trained along with other appropriate functionaries, according to their previous background and experience.

8. Apart from the various training courses, it would be useful to organise Workshops, of a week's duration in each State for the artists of the different training centres, as they have to play an active part in the preparation of publicity material at the field level. It would be worth-while to include the artists of the State Health Education Bureaux and Farm Information Units in these Workshops.

9. As the general pattern of training under Applied Nutrition Programme is now, more or less, settled and sufficient experience is available of how to carry out the training, it should be possible to complete the training programme in the new Applied Nutrition Programme Blocks in a much shorter time than had been possible so far. Ideally, six months from the inception of the programme should be adequate. In actual practice, however, this might have to be longer, depending upon the availability of training institutions and their existing commitments. In any event, one year should be regarded as the outside limit.

10. *Duration and Content of Training.*—The duration and syllabus of courses of categories of persons who are already included in the Applied Nutrition Programme training schedule and those who are now proposed to be added have been examined and re-cast, wherever necessary. This has been done mainly with a view to simplify the syllabi, better relate them to job requirements and give, in general, a greater practical bias to the training. The re-grouping of different categories of trainees, duration and venue of training, which are now suggested, are given in *Annexe II*; while the revised syllabi are set out in *Annexe III*. It has to be reiterated that these syllabi show, only broadly, the different aspects to be covered during training. It is essential that, in each case, the syllabus is further spelt out giving the actual time schedule for the different topics, as well as the weightage between theory and practical classes. The manner in which this can be done is shown for two courses in *Annexe IV* by way of illustration. A further step to be taken by the training centres, is to prepare synoptic notes to serve as guides for the trainers. At the State level, it has to be specially ensured that the process of actually drawing up detailed curriculum plans does take place. This will have to be the responsibility of the State Nutrition Officer or such other officer as may be entrusted with the general responsibility for Applied Nutrition Programme training.

11. The revised syllabi suggested for Mukhya Sevikas, Gram Sevikas, members of Yuvak Mandals and associate women workers will hold good for the respective basic training courses also; the only difference would be that, in the basic training of Mukhya Sevikas and Gram Sevikas, the treatment would be more detailed, the total time earmarked for the subject of nutrition being roughly double that of the Special Applied Nutrition Programme training.

12. Further examination is called for regarding the nutrition content in the pre-service training of Gram Sevikas and the trainers' training of the Instructors of Gram Sevak and Gram Sevika Training Centres and the Intermediate Level Training institutions.

13. No separate syllabus need be drawn up for the workers of voluntary organisations. As indicated earlier, they will join one of the appropriate training courses.

14. It would be noticed, from the foregoing account, that no detailed examination has been made of the training of State Nutrition Officers ; this requires to be further pursued.

15. *Refresher Training.*—Refresher training in Applied Nutrition should have the following objectives :—

(*a*) to supplement the earlier training in Applied Nutrition with special reference to production, distribution and educational aspects of the programme ;

(*b*) to further enrich the learning of the trainees by mutual exchange of experience and knowledge ;

(*c*) to acquaint trainees with the changes introduced in the programme of Applied Nutrition from time to time ; and

(*d*) to enthuse the trainees and inspire confidence in their ability to meet difficulties of work in the field.

16. In broad terms, the content of Applied Nutrition Programme refresher training should include :—

(*a*) review of the programme and the difficulties experienced by the workers in promoting different activities;

(*b*) information and knowledge on different aspects of the Applied Nutrition Programme as required by the participants ;

(*c*) new trends and approaches in the Applied Nutrition Programme with special reference to methods, personnel, organisation, programme and content ; and

(*d*) experiences gathered by different workers in promoting the programme.

The refresher training must be problem-oriented and should try to meet the needs of the participants.

17. While the need for refresher training is recognised and the broad contents have also been indicated, it is not desirable to organise a separate refresher training programme under Applied Nutrition Programme. Refresher training is required mainly for the different classes of official functionaries, who are engaged in implementing the programme, such as Block Development Officers, Extension Officers, Medical and para-Medical personnel in the blocks, Gram Sevaks and Gram Sevikas. Even as it is the Department of Community Development, Directorate of Extension, State Public Health Departments and other concerned agencies conduct refresher courses as part of the general training programme. The Applied Nutrition Programme refresher element should form one of the constituents of these courses. To

illustrate, there are already refresher courses for Gram Sevaks and Gram Sevikas at the Gram Sevak and the Gram Sevika Training Centres respectively, while the General courses in the Orientation & Study Centres provide the refresher element for the Block Development Officers. It should be possible, with a slight adjustment, to include the subject of nutrition in these refresher programmes. It is only in exceptional cases, such as of Instructors of training centres, that short refresher courses might be organised after they have actual experience of at least three years of work in the programme.

18. *Teaching Methods.*—As indicated earlier, it is quite essential that a detailed curriculum plan is developed for every training course. While doing so, it should be kept clearly in mind that an essential objective of the Applied Nutrition Programme is to aim at a higher nutritional level in the context of the existing situation in the rural areas ; the teaching must, therefore, emphasise the practical applications apart from providing the requisite theoretical base. The training centres already have considerable experience of various kinds of teaching techniques in their normal training programme. Refinement of these techniques and their adaptation for Applied Nutritioin training must be attempted constantly by each training institution.

19. *Training Institutions.*—As the educational aspect of the Applied Nutrition Programme was of primary importance, it was natural that the first set of Applied Nutrition Programme blocks should be located around institutions like Agriculture and Animal Husbandry Colleges, Home Science Colleges, Orientation & Study Centres, Social Education Organisers' Training Centres, Mukhya Sevika Training Centres and Gram Sevak and Gram Sevika Training Centres. There are a few such institutions which, for some reason or the other, still remain outside the purview of the State Plans of Operations. While selecting the next series of A.N.P. Blocks, these institutions must also be drawn into the programme. Their number being relatively small, it is inevitable that, as the programme expands, there would be an increasingly larger number of blocks in which suitable training institutions are not available. Here, there are two alternatives—first, to include other types of institutions as centres of training for Applied Nutrition Programme and, secondly, to concentrate on the existing types of institutions, even though this would extend their geographical coverage. It is felt that the second course of action would yield greater benefit ; the selected training institutions could be strengthened and their services utilised in as sustained a manner as possible, according as each series of A.N.P. Blocks are newly started.

20. It is seen that in some of the training centres, the practices on the campus, especially in the messes of trainees, do not always conform to the principles which are taught in the class room. The campus, it is needless to say, has to be a live example of proper nutritional practices, so that the trainees are fully convinced of the merits as well as the feasibility of what they, in turn, have to popularise in their respective areas. It would be useful therefore, if the charge of the hostel mess could be given to the Public Health Instructor or the Nutrition Instructress, wherever they are in position ; this need not interfere with the usual arrangement of placing a senior member of the teaching staff as Warden in overall charge of the residential wing.

21. *National or Regional Centres for A.N.P.*—A question which has sometimes been raised is whether there is need to develop a national centre or a few regional centres, devoted wholly to training, research and other functions connected with the Applied Nutrition Programme.

22. The Applied Nutrition Programme, it is recognised, has its unique features. It calls for an integrated approach to solve the nutritional problem in the rural areas, in which not only official agencies but the rural people take an active part in all the phases of the programme. Even on the 'official' side, there has to be concerted action by the medical, agricultural, animal husbandry and other extension workers. New menus and recipes which suit the palate, but do not offend tradition and custom, have to be developed in each local area. New techniques have to be evolved to popularise them among the rural people, leading ultimately to a greater spread of knowledge regarding the value of health and nutrition. It may be that, at present no single institution in the country is tackling all these problems together, in terms of training, research, production of suitable popular literature, etc.

23. Even then, the justification to set up one or more institutions devoted exclusively to the Applied Nutrition Programme would seem doubtful. In the first place, it is only very recently that Applied Nutrition Programme has come to be accepted as part of our national Plan. But, the *ad hoc* character of the programme still remains and one cannot yet visualise clearly the long-term perspective. The special training requirements under the Applied Nutrition Programme are such that the bulk of the training comprises short-term training of a relatively unsophisticated nature. Travel over long distances to reach the places of training involving considerable amount of time and money, would hardly be justified under such circumstances. The educational standards of the majority of the trainees would not permit instruction except in the local languages. The food habits also vary widely from one part of the country to another ; at the field level, this would be a significant factor. It would seem, therefore, that the training of the field staff would be carried on best within the respective States. It is only some special categories like the State Level Nutrition Officers and the Instructors at the various training institutions, who may require training facilities outside their States. Actually, the present position is that the bulk of the training of these categories has already been completed. The recurring requirement in these cases, on the other hand, is very limited. Therefore, from the point of view of the training requirements, there would not be adequate quantum of work to keep an institution set up specially for the Applied Nutrition Programme busy all the year round. In regard to research also, there are highly developed institutions in the country like the Nutrition Research Laboratories, Hyderabad, and the Central Food Technological Research Institute, Mysore, where considerable work is being done on various aspects of nutrition and dietetics. For the present, what is required is perhaps to involve them more directly in the Applied Nutrition Programme. Whatever balance of requirement there is in regard to the training of Instructors, could be met by organising special courses at suitable institutions, as and when necessary.

24. *Training, Follow-up and Evaluation.*—The need for an efficient system of follow-up in any training programme is well known ; this is all the more important in a developing programme like the Applied Nutrition Programme. It is imperative that the staff of the training centres keep in touch with their former trainees to assess the extent to which the training imparted to them has been able to meet their job requirements and field situations, and the ways in which the quality of training can be further improved. The actual experience, however, is that follow-up is one of the most neglected aspects of training, one of the reasons being shortage of staff. This is stated to be the case particularly at the Gram Sevika Training Centres, where the total

complement of staff is itself limited. This requires to be remedied and it has to be ensured that there is a systematic follow-up of Applied Nutrition Training.

25. In a programme like the Applied Nutrition Programme with its avowedly educational objectives, the role of the training centres cannot be confined only to training within the limits of the campus. The training centre has a more positive role to play ; it has to reach out into the field, gather insights so that not only quality of training is maintained, but programme administrators are kept informed of the effectiveness with which the programme is being implemented. As the number of blocks served by each training centre is limited and these will be in the close neighbourhood of the centre, it should not be difficult for the training centre to fulfil this responsibility. As part of this extra-mural effort, the training centres should also give assistance to the block staff in organising Applied Nutrition Programme training at special camps within the block.

26. If the training centres carry out systematic follow-up and keep their eyes and ears open in regard to the trends in the implementation of the programme in the blocks attached to them, it would virtually serve the purpose of concurrent evaluation. Naturally, the supervisory officers, who employ the trained staff, would also be in a position to offer comments in regard to the utility of the training. These apart, formal evaluation of the training programme could be carried out occasionally by the State Evaluation Agencies or other specialist bodies.

27. *Supervision of training*—State Level Committees have already been set up to coordinate the implementation of the Applied Nutrition Programme. They might constitute Sub-Committees to provide overall guidance to and supervision of the Applied Nutrition Programme training. Alternatively, State Level Training Committees, which exist in some States for Community Development or Extension Training, could be utilised for this purpose. It would be useful also to hold annual Seminars or Conferences of the heads of the training institutions engaged in Applied Nutrition Programme training, where problems which arise from time to time could be discussed. Copies of the proceedings of such Conferences might be forwarded to the Ministry and the International Agencies, so that lessons having wider application could be communicated to other States also.

28. While the Committees, as indicated above, would provide broad policy guidance, it is quite essential that an officer at the State level is clearly entrusted with the general responsibility for organising Applied Nutrition Training in the State. This has to be specially emphasised, as one of the most noticeable weaknesses in the Applied Nutrition Programme training so far has been the absence of effective supervision at this level. It is not possible, however, to indicate on uniform pattern for every State. The organisational arrangements for Applied Nutrition Programme vary widely from one State to another and the selection of the officer, in whom this general responsibility should be vested, would have to be determined according to local situations.

29. At the Block level, the Block Development Officer would naturally have the general responsibility for organising Applied Nutrition Training for those who have to be trained within the block. Here, as mentioned earlier, the Principals of the training centres concerned should give guidance and support.

30. Under the Directorate of Extension, there are four Regional Home Economists functioning at present. Presently, their main function is to inspect and guide the Gram Sevika Training Centres. They could be usefully involved in the Applied Nutrition Training Programme, especially of women workers of various kinds.

31. *Production of literature.*—The State Governments have already been informed of the general procedure for publication of books and other literature under the Applied Nutrition Programme, the cost being met by UNICEF up to the ceiling provided in the State Plans of Operations. The immediate need is to bring out publications in the regional languages by translating the available and approved material. The question of paying royalty to the authors may also be examined, in order to encourage production of suitable literature on Applied Nutrition Programme. In all the States, there are well-equipped Farm Information Units under the Agriculture Departments. As production is one of the components of the Applied Nutrition Programme, these units could be utilised appropriately to bring out suitable publicity material.

32. *Adoption of the revised training pattern.* The changes in the training programme, which have been recommended in the foregoing paragraphs may be given effect to as early as possible. In Applied Nutrition Programme blocks, where training is to be organised for the first time, there should be no difficulty in adopting the new pattern even from the outset. In blocks where training has already been completed, the opportunities afforded by the refresher training might be utilised to emphasise topics or aspects which have been introduced for the first time in the present set of recommendations.

ANNEXE I

LIST OF PARTICIPANTS IN APPLIED NUTRITION WORKSHOP HELD ON 28TH FEBRUARY, 1966 TO 2ND MARCH, 1966

S. No.	Name

Ministry of Food, Agriculture, Community Development and Cooperation :

1. Shri S. M. H. Burney, Joint Secretary.
2. Shri T. R. Satish Chandran, Deputy Secretary.
3. Shri M. C. Nanavatty, Director (Social Education).
4. Shri Ibne Ali, Director (Agriculture).
5. Smt. Kusum Prasad, Under Secretary.
6. Dr. S. R. Barooah, Director, Extension Training.
7. Mrs. S. Dantyagi, Joint Director.
8. Miss Shanti Chakravarthi, Senior Home Economist.

Ministry of Health and Family Planning :

9. Dr. (Miss) R. Karnad, DADG (Nutrition).
10. Miss K. Sood, DADG (SHE).

Department of Social Welfare :

11. Shri G. N. Bose, Planning and Technical Officer.

Central Social Welfare Board :

12. Shri D. Paul Chowdhry, Project Officer.

State Governments :

13. Miss L. R. Mitra, Under Secretary, Government of Orissa.
14. Miss Shanti Sudershanam, Project Nutrition Officer, Madras.
15. Miss C. Govind, Deputy Director, Government of Uttar Pradesh.
16. Dr. K. D. Malaviya, State Nutrition Officer, P.H.I., Lucknow.
17. Shri D. P. Bhatnagar, Dietician, Applied Nutrition Programme, P.H.I., Lucknow.
18. Shri K. B. Shukla, Under Secretary, Government of Madhya Pradesh.
19. Dr. G. N. Joshi, Principal, P.H.I., Nagpur.
20. Mr. M. Muzural Haq, Deputy Secretary, Government of Andhra Pradesh.
21. Mr. Veeraswamy, Project Officer, Government of Andhra Pradesh.

UNICEF :

22. Dr. Ram Das, Chief, Nutrition Division.
23. Mr. D. K. Faris, Field Consultant.

ANNEXE I—*Contd.*

S. No.	Name
Food and Agriculture Organisation :	
24.	Dr. I. A. Simpson.
25.	Miss B. M. Purvis, Nutrition (Education & Training).
World Health Organisation :	
26.	Mrs. A. R. Moore, Regional Health Education Adviser.
Training Centres :	
27.	Shri S. B. Patil, Principal, Gram Sevak Training Centre, Dharwar.
Others :	
28.	Dr. (Mrs.) R. P. Devadas, Principal, Sri Avinashilingam Home Science College, Coimbatore.
29.	Dr. M. Nainie, Head Rural Community Extension Department, Lady Irwin College, New Delhi.

ANNEXE II

TRAINING FOR THE VARIOUS FUNCTIONARIES CONNECTED WITH THE APPLIED NUTRITION PROGRAMME

Sl. No.	Category	Duration of Training	Place of Training	Particulars of Trainers	Remarks
1	2	3	4	5	6
1. (*a*)	Instructors in Public Health in Gram Sevak Training Centres and Instructresses in Nutrition in Mukhya Sevika and Gram Sevika Training Centres.	6 weeks	Selected institutions.	Staff of the institutions, State Heads of Departments and others.	
(*b*)	Instructional staff of Social Education Organisers' and Mukhya Sevika Training Centres, O & SCs/TO & SCs and of Gram Sevak and Sevika Training Centres not included in (*a*).	2 weeks	Do.	Do.	
2.	Senior Administrative and other Officers at State and Regional levels and District Collectors.	2 to 3 days' seminar.	State Headquarters.		Personnel from the Central Government and International Agencies concerned with the programme will take part.
3.	Medical Officers of Primary Health Centres and Instructors of Orientation Training Centres for Health Personnel.	3 weeks	One of the Orientation Training Centres for Health Personnel or any other suitable place in the State.	Staff of Orientation Training Centres, State Nutrition Officer and others.	
4.	District Health Officers . .	1 week	State Public Health Institute or one of the Orientation Training Centres for Health Personnel.	Staff of the Institute/Centre, State Nutrition Officer and others.	

5.	Lady Health Visitors . .	3 weeks	A suitable institution within the State (if there is an OTC for Health Personnel in the State, it can be selected).	Staff of the institution, District Health Officer, State Nutrition Officer and others.	
6.	Auxiliary Health Workers .	2 weeks	Do.	Do.	
7.	Midwives	2 weeks	Do.	Do.	
8.	Public Health Nurses . .	1 month	Do.	Do.	
9.	Sanitary Inspectors . .	2 days	Gram Sevak Training Centres.		They will attend the first 2 days of the course for Block functionaries *vide* S. No. 11.
10.	District Level Officers of Agriculture, Animal Husbandry, Education, Social Education, Medical, Fisheries, Welfare, Women's Welfare and Information Departments, District Planning Officers, SDOs, Presidents and CEO/ Secretaries of Zila Parishads.	1 week	Do.	State Nutrition Officer, Instructors in Public Health in Gram Sevak Training Centres, Instructresses in Nutrition in Gram Sevika Training Centres, State Heads of Departments and others.	Combined Gram Sevak and Gram Sevika Training Centres are to be preferred.
11.	B.D.O., Extension Officers, Block Level Education Officers, Sub-Deputy Inspector and Inspectress of Schools and other block level officers.	1 week	Do.	Staff of Gram Sevak Training Centres and District Level Officers.	
12.	Mukhya Sevikas . . .	4 weeks	Mukhya Sevika and Gram Sevika Training Centres.	Staff of the Training Centres.	
13.	Gram Sevikas, Bal Sevikas and Pre-School Teachers . .	1 month	Gram Sevika Training Centres.	Do.	

ANNEXE II—*Contd.*

1	2	3	4	5	6
14.	Gram Sevaks	1 week	Gr am Sevak Training Centres.	Staff of the Training Centres.	
15.	Chairmen of Block Panchayat Samitis, Chairmen and members of Production Committees and Chairmen of Welfare Committees of Panchayat Samitis ; Sarpanches of Panchayats, Chairmen and Members of Production and Welfare Committees of Panchayats and Panchayat Secretaries.	2 to 3 days	Block Headquarters or other convenient places in the block.	Block staff, Chairmen of Panchayat Samitis and Chairmen of Production and Welfare Committees of Panchayat Samitis.	
16.	Instructors in Nutrition in Primary Teachers' Training Centres.	2 weeks	Gram Sevak Training Centres.	Staff of the Training Centres and Block Level Officers.	Combined Gram Sevak and Gram Sevika Training Centres are to be preferred.
17.	Primary School Teachers (Men)	2 weeks	Do.	Do.	Do.
18.	Primary School Teachers (Women), Members of Mahila Mandals and Associate Women Workers.	2 weeks	Mukhya Sevika and Gram Sevika Training Centres.	Do.	
19.	Members of Youth Clubs .	7 days	Block Headquarters or other convenient places in the block.	Block staff, Chairmen of Panchayat Samitis and Chairmen of Production and Welfare Committees of Panchayat Samitis.	
20.	Fishermen.	3 weeks	Fish Farm, near block headquarters.	E.O. (Fisheries), Fish Farm Superintendent of the State Fishing Department.	
21.	Poultry keepers . . .	2 weeks	Block Poultry Farm	Extension Officer (Animal Husbandry), or Poultry Farm Assistant.	

ANNEXE III

REVISED SYLLABI FOR TRAINING IN APPLIED NUTRITION

Sl. No.	Category	Content
1	2	3
1	(*a*) Instructors in Public Health in Gram Sevak Training Centres and Instructresses in Nutrition in Mukhya Sevikas and Gram Sevika Training Centres.	I. *Introduction* :
		1. Nutrition—a multifaceted subject—Importance of nutrition in maintenance of health.
		2. Relationship between nutrition, health status and working efficiency, production and economic development.
		3. Local nutrition and health problems.
		4. The Applied Nutrition Programme—Philosophy, objectives and operational set-up.
		II. *Principles of Foods and Nutrition* :
		1. Classification of locally available foods— energy giving, body building & health giving } (protective and regulatory)
		2 Composition of foods : (*a*) Carbohydrates (*b*) Proteins (*c*) Fats (*d*) Minerals (*e*) Vitamins, and (*f*) Water.
		3. Their functions and sources
		4. Effects of excesses and deficiencies
		5. Factors which influence the digestion and utilisation of foods, such as: status of health, intestinal infections, emotional stresses, rest and relaxation, and mealtime environment.
		III. *Nutritional Requirements and Planning of Adequate Diets* :
		1. Factors affecting nutritional requirements.
		2. Concept of " Recommended nutritional allowance ".
		3. Recommended nutritional allowances for : (*i*) infants ; (*ii*) young children ; (*iii*) adolescents—boys and girls ; (*iv*) adults—male and female ; (*v*) pregnant and nursing women ; and the (*vi*) aged.

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		4. Additional allowances for physical work and special conditions.
		5. Food Composition Tables—Uses and limitations.
		IV. *Food Budgeting* :
		1. Influences of income on the structure of diets.
		2. Making the best use of the money spent on foods, especially in the lower income groups—proper selection and purchase of foods.
		3. Planning adequate diets for families based on recommended nutritional allowances at different income levels.
		4. Calculation of the nutritive value of the diets planned.
		V. *Principles of Food Preparation and Preservation* :
		1. Principles of cooking : Conservation of nutrients by proper cooking methods.
		2. Personal cleanliness and cleanliness of kitchen and utensils.
		3. Selection and utilisation of locally available nutritious foodstuffs—Use of protein rich foods.
		4. Storage of food ; preservation of vegetable and fruits suited to village economics, resources and needs.
		VI. *Public Health Aspects of Nutrition* :
		1. Relation of food to growth and health.
		2. Under-nutrition and malnutrition—distinction between—
		Under-nutrition—food requirements in quantity and in quality are not provided according to age, sex and occupation.
		Malnutrition—unbalanced provision of nutrients and/or defective utilisation.
		With reference to local conditions in trainees areas,
		(*a*) contributory factors : poverty, ignorance, lack of availability and/or non-utilisation of available resources,
		(*b*) the vulnerable groups affected and reasons (expectant and nursing mothers, children).
		3. Hygiene of :
		(*a*) The foodstuffs : fresh, stale, spoiled, contaminated, adulterated. Dangers of food spoilage and food adulteration.

ANNEXE III—*Contd.*

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		(*b*) Food handler—1. health status. 2. personal cleanliness especially hands and finger nails. 3. hygienic habits—coughing, cleaning nose, spitting, latrine use, handwashing, etc. 4. cleanliness of hands for eating. (*c*) Environment —1. safe water (boiling). 2. sanitary disposal of faeces & urine. 3. protection against rats flies, etc. 4. cleanliness of kitchen & utensils. (*d*) Precautions during storage, handling, cooking, transport, distribution, serving and eating of food. (*e*) Food poisoning. (*f*) Food inspection. (*g*) Food legislation. 4. Nutritional deficiency diseases : (*a*) Protein—calories deficiencies (Kwashior kor—morasmus anaemis) causing stunted growth and weakness. (*b*) Rickets. (*c*) Goitre. (*d*) Anaemia. (*e*) Nightblindness, Beriberi, Scurvy, etc. 5. Diseases due to toxicants, latherism. 6. Inter-relation and inter-action of intestinal diseases such as diarrhoea, dysentery, worms, etc. and malnutrition. VII. *Community feeding such as school lunch programmes ; other feeding programmes.* VIII. *Food Production in the home, school and community :* 1. Importance of the production of protective foods in the Applied Nutrition Programme through school, home and community gardens : Fruits, Vegetables, Eggs, Fish, Dairy Products.

ANNEXE III—*Contd.*

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		IX. *Nutrition Education* : 1. Importance of nutrition education. 2. Study of local food customs and habits. 3. Individual and groups requiring nutrition education. 4. Methods of approach to change food habits—knowledge, attitude and skills. 5. Use of education and aids : (*a*) A.V. aids (*b*) Preparation of exhibits (*c*) Demonstration for mass and groups (*d*) Mobile Vans. 6. Importance of fitting current scientific knowledge of nutrition to local conditions and local food habits and avoidance of violent changes in local pattern influenced by religious beliefs and traditional cultural patterns. 7. Locally available foods and recognition of their food values. 8. Popularisation of new and unfamiliar foods.
		X. *Role of Instructors in Public Health and Nutrition in A.N.P.* : (*i*) in making Gram Sevaks/Sevikas nutrition-conscious, and improving their diets and health ; and (*ii*) in preparing Gram Sevaks/Sevikas to work efficiently for the A.N.P. in the Block.
		XI. *Implementation of the Applied Nutrition Programme* : 1. Content of Applied Nutrition Programme. 2. Plan of operations and other details, including role of different block functionaries. 3. Planning of the programme 4. Groups to be involved in promoting the programme and their training, *e.g.*, Yuvak and Mahila Mandals. 5. Vital role of families and school teachers in improving nutrition. 6. Role of (*a*) participating agencies in A.N.P. at the village, block and Central levels (*b*) functionaries at various levels and their training. 7. Role of International agencies—UNICEF, FAO and WHO. 8 Importance of team approach at various levels.

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		XII. *Surveys and Evaluation* 1. Types of surveys : (*a*) Dietary, (*b*) Food consumption, (*c*) Economic, including food production, family composition, family occupations and resources in land, livestock, crops, cash income, etc. 2. Criteria for Evaluation.
	(*b*) Instructional staff of Social Education Organisers and Mukhya Sevika Training Centres, O & SCs/TO & SCs and of Gram Sevak and Sevika Training Centres not included in (*a*).	I. *Introduction* : As in Item I of Serial No. 1(*a*). II. *Principles of Foods and Nutrition* : As in Item II of serial No. 1(*a*). III. *Nutritional Requirements* : As in item III of serial No. I(*a*). IV. *Planning Meals* : 1. Planning meals to meet nutritional requirements of individuals, families and groups (with emphasis on vulnerable groups) with due regard to : (*a*) cost (*b*) availability (*c*) customs. V. *Public Health Aspects of Nutrition* : As in Item VI of Serial No. 1 (*a*). VI. *Methods of food preparation, preservation and storage and prevention of wastage of Nutrients* : 1. Losses of nutrients during harvesting storage processing, preservation, preparation and cooking of foods. 2. Conservation of nutrients by proper methods of storing, handling, pre-planning and cooking. 3. Some understanding of methods suitable for village conditions for preservation of fruits and vegetables. VII. *Nutrition Education* : As in Item IX of Serial No. 1(*a*). VIII. *Increasing Food Production.*

ANNEXE III—*Contd.*

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		IX. *Role of Instructors in ANP.* X. *Implementation of Applied Nutrition Programme.* As in Item XI of Serial No. 1(*a*). XI. *Surveys and Evaluation:* As in Item XII of Serial No. 1(*a*).
2	Senior administrative and other officers at State and regional levels and District Collectors.	I. *Introduction* : As in I of serial No. 1(*a*). II. *Nutrition Education* : 1. Object of nutrition education. 2. Planning of nutrition education for different groups *e.g.* village level workers, school teachers, Gram Lakshmis, members of youth and women's organisations, members of Panchayati Raj institutions, etc. 3. Effective methods for nutrition education. 4. Use of surveys and their findings as basis for nutrition planning education. III. *Implementation of Applied Nutrition Programme* : As in XI of serial No. 1(*a*).
3	Medical officers of Primary Health Centres and Instructors of Orientation Training Centres for health personnel.	I. *Introduction* 1. Importance of Nutrition in Public Health Programmes. 2. Nutrition Programme—multi-faceted programmes. II. *Nature, Role and Metabolism of Nutrients* : 1. Chemistry of nutrients. 2. Calorie and Energy metabolism. 3. Proteins and amino-acids. 4. Carbohydrate. 5. Fats and Essential fatty Acids. 6. Minerals and Trace Elements. 7. Vitamins. III. *Nutritional Requirements* : 1. Recommended nutritional allowances for different age and for different occupations. 2. Effects of infection, and different environmental factors in modifying nutritional requirements.

ANNEXE III—*Contd.*

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		IV. *Undernutrition and Malnutrition* :
		1. Prevalence of undernutrition and malnutrition in India—regional distribution and the vulnerable population.
		2. Protein-calorie malnutrition among infants and pre-school children.
		3. Fat and essential fatty acid deficiency.
		4. Mineral deficiencies—special reference to calcium and iron deficiency.
		5. Trace elements—goitre and calories problems.
		6. Vitamin deficiencies with special reference to the following :—
		(*a*) Keretomalacia
		(*b*) Nutritional megalolelastri anaemias
		(*c*) Ariboflaerinosis.
		7. The importance of detecting sub-clinical deficiencies.
		8. Non-nutritional factors contributing to malnutrition.
		V. *Food Hygiene* :
		1. Food microbiology and its importance in the storage, processing and handling of food.
		2. Hygiene of food handlers.
		3. Kitchen sanitation.
		4. Food poisoning.
		5. Food inspection and legislation.
		VI. *Public Health and Nutrition* :
		1. Study of social and cultural factors in influencing food habits, especially in relation to infant and child nutrition.
		2. Importance of maternal nutrition and the factors affecting it.
		3. Balanced diet with cheap, locally available foods.
		4. Nutrition education of mothers—its importance in child and maternal nutrition.
		5. The role of village level workers, teachers and health workers in nutrition education programmes.
		6. Importance of nutrition of the school-going population—the school meal programme.

ANNEXE III—*Contd.*

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		VII. *Food Problems in India* : 1. Review of food production vs. population. 2. Brief resume of programmes for increased production of cereals and other grains, dairy products and fishery. 3. Programme for population control.
		VIII. *Applied Nutrition Programme* : 1. The need for a multi-pronged attack on nutrition problems. 2. The concepts and the components of the A.N.P. in India. 3. The role of health agencies in the programme.
		IX. *Field work in Diet and Nutrition Surveys* : 1. Importance of diet and nutrition surveys for base-line data and evaluation in Applied Nutrition Programme. 2. Different methods of conducting diet surveys and interpretation of data. 3. Different methods of assessing nutritional status. 4. Socio-economic surveys. 5. Importance of proper sampling of population.
4.	District Health Officers . .	I. *Introduction* : As in item I of serial No. 1(*a*). II. *Planning Meals* : As in item IV of serial No. 1(*b*). III. *Public Health Aspects of Nutrition* : As in item VI of serial No. 1(*a*). IV. *Methods of food preparation, preservation and storage and Prevention of Wastage of Nutrients* : As in item VI of serial No. 1(*b*). V. *Nutrition Education* : As in item IX of serial No. 1(*a*). VI. *Implementation of Applied Nutrition Programme* : As in item XI of serial No. 1(*a*).

ANNEXE III—*Contd.*

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5. 6.	Lady Health Visitors and Auxiliary Health Workers	I. *Introduction :* 1. Functions of food and the importance cf balanced diet in the maintenance of good health. 2. Applied nutrition and its practical aspects in rural welfare work. II(*A*). *Basic Principles of Nutrition :* 1. Nature of food. 2. Composition of food. (*a*) Carbohydrates. (*b*) Proteins (animal and vegetable proteins). (*c*) Fats. (*d*) Minerals. (*e*) Vitamins. 3. Classification of foods, protective foods and those available locally. (*B*) *Biochemistry of Nutrition :* 1. Unit measurements used in nutrition—nature of calorie. 2. Physiology of the alimentary and excretory systems. 3. Processes of digestion. 4. Functions of digestive and oxidative enzymes. 5. Utilisation of nutrients. 6. Nutritional importance and metabolism of :— (*a*) Carbohydrates. (*b*) Proteins. (*c*) Fats. (*d*) Minerals. (*e*) Vitamins. (*f*) Water. (*g*) Air. 7. Their functions and requirements in health and under physiological stress. 8. Basal and total metabolism. (*C*) 1. Value of yellow and orange coloured vegetables and fruits such as pumpkins, tomatoes, carrots, papayas, bananas etc., for providing Vitamin A in the diet. 2. Value of citrus fruit (oranges and lemons) amla, guava, etc., for supplying Vitamin C.

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3. Importance of root vegetables, sweet potatoes and yams in the diet and their cultivation in gardens.

4. Value of milk and milk products such as dahi, lassi, etc., in the vegetarian diet.

III. *Public Health Aspects of Malnutrition :*

1. Under-nutrition and malnutrition—its recognition and its effect on human body.
2. Metabolic derangement and growth failure.
3. Certain commonly met diseases due to malnutrition and their recognition, prevention and general principles of treatment.
4. Diseases due to ;
   (*a*) Vitamin A deficiencies.
   (*b*) Keratomalacia, xerophthalmia and blindness.
   (*c*) Vitamin B deficiency, *e.g.*, beri beri, arboflavinosis, etc.
   (*d*) Iodine deficiency, *e.g.*, goitre.
   (*e*) Calcium deficiency.
   (*f*) Iron deficiency and other types of anaemia.
5. Local patterns of malnutrition.
6. Contributory factors leading to malnutrition.
   (*a*) Poverty.
   (*b*) Ignorance.
   (*c*) Lack of availability and/or wastage and non-utilisation of available resourses.
7. Vulnerable Groups :
   (*a*) Specially liable to malnutrition.
   (*b*) Reasons for this.

IV. *Food Hygiene and environmental sanitation:*

1. Hygiene of food, including micro-biology.
2. Precautions to be taken during the storag processing, handling, transport, cooking distribution and serving of food.
3. Personal cleanliness of :
   (*a*) Cooks.
   (*b*) Children, before and after meals.
4. Cleanliness of kitchen and utensils.
5. Food poisoning.
6. Food inspection.
7. Food legislation.

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		8. Safe water supply and hygienic methods of disposal of waste. Diseases brought by bad sanitation.
		9. Hygienic methods of reconstituting skim milk and preparation of curds from it.
		V. *Prevention of malnutrition :*
		1. Value and importance of protective foods.
		2. Balanced diets.
		3. Supplementary meals.
		4. Importance of supply of protective foods.
		5. Increasing knowledge of nutrition.
		6. Avoidance of losses of nutrients.
		VI. *Prevention of wastage of Nutrients while cooking, serving etc.:*
		1. Losses of nutrients during :
		(*a*) Harvesting.
		(*b*) Storage—in bulk in the home.
		(*c*) Processing foods.
		(*d*) Milling of cereals.
		(*e*) Preservation of food stuffs.
		(*f*) Preparation, washing and cooking of foods.
		2. Avoidance of losses of nutrients :
		(*a*) by overpolishing rice.
		(*b*) by over-pealing of vegetables and throwing away the cooking water of vegetables.
		VII. *Nutritional Needs of vulnerable groups :*
		1. Special nutritional needs of vulnerable groups.
		2. How they can be met.
		3. Weaning of infants suitable foods for.
		4. Supplementary meals for :
		(*a*) Pre-school age children.
		(*b*) School children.
		(*c*) Pregnant and nursing women.
		5. Recipes and diets for such meals.
		VIII. *Practical Cookery and Dietetics :*
		1. Principles of cooking.
		2. Cooking of attractive meals.
		3. Utilisation of locally available nutritious food stuffs.

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		4. Use of protein-rich vegetable foods. 5. Conservation of nutrients by proper cooking methods. 6. Preservation of fruit and vegetables by methods suited to village economics, resources and needs. 7. Importance of Salads. 8. Methods of sprouting Grams. 9. Use of vegetable proteins foods such as groundnut, grams and beans field beans etc.
		IX. *Economics of Food :* 1. Influence of income on structure of diets. 2. Making best use of the money spent on food especially in the lower income groups. 3. Planning of diets to suit family resources.
		X. *Large Scale Catering and community feeding* : (*a*) Hygienic methods for handling and preparation of food in bulk. (*b*) Economic purchase of food. (*c*) Food sanitation. (*d*) Planning balanced menus and diets.
		XI. *Dietary Habits and Customs :* 1. Study of local food customs and habits : (*i*) General—vegetarianism. (*a*) Due to religious beliefs. (*b*) Non-availability of animal foods. (*ii*) Specific, as it affects : (*a*) Weaning of children. (*b*) Feeding of toddlers. (*c*) Feeding of pregnant women. (*d*) Feeding, post partum and nursing women. 2. Methods of approach to change food habits. 3. Importance of fitting current scientific knowledge of nutrition to local conditions and local food habits and avoidance of violent changes in local pattern influenced by religious beliefs and traditional cultural patterns.

ANNEXE III—*Contd.*

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		4. Locally available feeds and recognition of their food values. 5. Popularisation of new, unfamiliar foods. 6. Nutrition education and those who can help to spread nutritional knowledge. XII. *Practical field work :* Types of surveys : (*i*) Clinical (*ii*) Dietary (*iii*) Food consumption (*iv*) Economic, including food production surveys, family composition, family occupations, and resources in land, livestock, crops, cash income, etc. XIII. *Nutrition Education :* 1. Organisation of nutrition and cookery demonstrations at agricultural shows, village fairs, etc. 2. Description of audio-visual aids. Use of different media for instruction. 3. Preparation of exhibits and demonstrations. 4. Mobile vans for Nutrition education, demonstration diets, etc. and the collection of data on food habits.
7. Midwives	. . . .	I. *Functions of Foods :* 1. Simple facts regarding functions of food for maintenance of health. 2. Types and quantities of foods to eat. 3. Special value of certain classes of food necessary for growth prevention of diseases building up the body etc. 4. Foods necessary for : (*a*) energy and work. (*b*) growth of body. (*c*) for improving blood supply. (*d*) for perservation of eye-sight. (*e*) for building up bones & teeth etc. 5. Special requirements of foods for : (*a*) expectant and nursing mothers. (*b*) for proper growth of infants. (*c*) infants at the time of weaning.

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II. *Making the best use of available nutritious foods :*

1. How to constitute cheap and nutritious diets and making use of locally available foods.
2. Making use of leafy vegetables and cheap fruit such as amla, guava, banana etc.
3. Making use of peas and beans, sprouted grams in the diet.

III. *Importance of milk and milk products in the diet.*

1. Place of dahi, lassi and skim milk in the dietary, especially of mothers and children.
2. Methods of preparing reconstituted skim milk.
3. Hygienic methods of handling fresh and dried milk, boiling milk etc.
4. Cleanliness of kitchen :
   (*a*) keeping the kitchen clean.
   (*b*) use of clean utensils.
5. Value of clean drinking water.

IV. *Diet for the sick and aged :*

1. Importance of body building foods.
2. Invalid's diet.

V. *Correct methods of cooking foods without loss of Nutrients :*

1. How to cook rice without throwing rice water.
2. How to cook fresh vegetables without loss of nutrients.
3. Importance of salads.
4. Methods of sprouting grams.
5. Value of fish in the diet, especially in coastal and riverine regions.

VI. *Value of Kitchen Garden, and School Gardens :*

1. Growing of different types of leafy vegetables.
2. Quick growing fruit trees such as banana, papaya etc.
3. Use of vegetables from the school gardens in the school meals.

ANNEXE III—*Contd.*

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8.	Public Health Nurses . .	Same as in the case of Instructors in Public Health and Instructresses of Nutrition.
9.	Sanitary Inspectors . . .	No separate syllabus (please see item 9 in *Annexe II*).
10.	District level officers of Agriculture, Animal Husbandry, Education, Social Education, Medical, Fisheries, Welfare Women's Welfare and Information Departments, District Planning Officers, SDOs, Presidents and CEO/Secretaries of Zila Parishads.	I. *Introduction :* As in item I of the Serial No. 1 (*a*). II. *Planning Meals :* As in item No. IV of Serial No. 1 (*b*). III. *Nutrition Education :* As in item II in Serial No. 2. IV. *Implementation of Applied Nutrition Programme:* As in item No. XI of Serial No. 1 (*a*).
11.	Block Development Officer, Extension Officers, Block Level Education Officers, Sub-Deputy Inspector and Inspectress of Schools and other block level officers.	Broadly, the syllabus prescribed at Serial No. 1(*b*) will be followed ; but discussions will be preferred to lectures, as the media of training. The role of the block staff as trainers at the block level will be specially emphasised.
12.	Mukhya Sevikas . . .	I. *Introduction : Nutrition a multifaceted subject :* 1. Importance of nutrition in the maintenance of health. 2. Importance of national health status in production and economic development. 3. Importance of identification of nutritic problems, local nutrition and health surveys local agricultural, horticultural and economic surveys. 4. Evolving an integrated programme dealing with public health aspects, production, distribution, preservation, utilisation and consumption. II. *Principles of Foods and Nutrition :* As in Item II of Serial No. 1 (*a*). III. *Nutritional requirements and planning of adequate diets :* As in Item III of Serial No. 1 (*a*). IV. *Pubilc Health Aspects of Nutrition :* As in item VI of Serial No. 1 (*a*).

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		V. *Effects of Inadequate Environmental Hygiene :* 1. Diarrohea and dysentries. 2. Helminthic infections, and their influence on nutrition. VI. *Prevention of Malnutrition :* As in item V of Serial No. 5. VII. *Prevention of Waste of Nutrients :* As in item VI of Serial No. 5. VIII. *Nutritional needs of Vulnerable Groups :* As in item No. VII of Serial No. 5. IX. *Practical Cookery and Dietetics :* As in item No. VIII of Serial No. 5. X. *Economics—Elementary Principles :* As in item No. IX of Serial No. 5. XI. *Community feeding .* As in item No. X of Serial No. 5. XII. *Essential Role of the Producers of Food :* A. *Agriculture* : 1. Influence of soil and climate on production of food and on dietary habits. 2. Food habits in urban and rural areas—(urban population buy food of choice within economic means, rural population consume mostly what they produce). 3. Importance of good seeds and fertilisers. 4. Importance of cereal crops. 5. Importance of pulses and legumes. 6. Importance of vegetables : (*a*) Green leafy. (*b*) Root. (*c*) Fruit vegetables (non-leafy vegetables). 7. Importance of fruits. 8. Horticulture, Community gardens and Home gardens.

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		9. Value of perennial trees and shrubs, whose leaves can be eaten throughout the year in lieu of green leafy vegetables.
		10. Need to grow nutritionally valuable vegetables in lieu of those less nutritious.
		11. Reasons which prevent increased cultivation of vegetables and fruits.
		(*a*) Lack of appreciation of their value.
		(*b*) Unsatisfactory dietary habits.
		(*c*) Insufficient or infertile land.
		(*d*) Lack of water.
		(*e*) Damage by animals.
		12. How the above difficulties can be overcome.
		B. *Animal Husbandry* :
		1. Upgrading of cattle.
		2. Need for proper feeding of livestock.
		3. Importance and value of milk.
		4. Competition in use of land between the needs of man and of animals.
		5. Value of poultry and eggs.
		6. Goats and goat milk.
		7. Importance of pigs.
		C. *Fisheries* :
		1. Value as dietary supplements.
		2. Problems of the industry.
		3. Economics of distribution and supply.
		XIII. *Food Customs and Habits* :
		As in item No. XI (1) of Serial No. 5 & 6.
		XIV. *Nutrition Education* :
		As in item No. IX of Serial No. 1 (*a*).
		XV. *Surveys and Evaluation* :
		As in item No. XII of Serial No. 1 (*a*).
		XVI. *Objectives and Purpose of the Applied Nutrition Programme* :
		1. Increased food production, especially protective foods, at village for the benefit of the village people.

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		2. Nutrition Education aimed at improving the consumption of increased amounts of protective foods.
		3. Cooperation by members of the village community to achieve 1 and 2 above.
		4. Supplementary feeding of vulnerable groups as a result of 1, 2 and 3 above.
		5. Plan of Operations.
		XVII. *Cooperation between Government Departments, Voluntary Organisations and the General Public* :
		1. To stress the point that prevention of malnutrition and improvement of nutrition is not the responsibility or function of any one Department but needs the close cooperation of many Departments and Government officials.
		2. Value and importance of voluntary organisations.
		3. Encouragement of Women's Associations ; Youth Clubs ; Young Farmers' Clubs.
		4. Role of women in the home and in the community.
		5. Assistance of women in community projects, distribution of milk and preparation and distribution of supplementary meals to vulnerable groups.
		6. Vital role of school teachers in improving nutrition.
		XVIII. *Training of local women workers* :
		Topics to be taught : (*a*) Simple facts of types and quantities of food to eat. Special value of certain articles of diet necessary for growth. (*b*) What foods are necessary to make a baby grow. (*c*) What foods are necessary for improving the blood supply. (*d*) What foods are necessary for preservation of good eyesight. (*e*) What foods are specially good for expectant nursing women. (*f*) Examples of recommended diets using locally available foodstuffs. (*g*) Diet for the sick and the aged. (*h*) Simple cooking procedures which retain the nutrients in articles of diet. (*i*) Hygienic methods for preparing and handling fresh and dried milk.

ANNEXE III—*Contd.*

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		XIX. *Study Tours* :
13.	Gram Sevikas, Bal Sevikas and Pre-school Teachers.	I. *Introduction* : 1. Nutrition is a multifaceted subject. 2. Importance of Nutrition in maintenance of health, productivity and economic development. 3. Local nutritional problems based on nutrition diet and health surveys. II. *Basic Principles of Nutrition* : 1. Functions of food. 2. Composition of food in terms of— (*a*) carbohydrates ; (*b*) proteins ; (*c*) fats ; (*d*) minerals ; and (*e*) vitamins. 3. Their functions and sources. 4. Classification of locally available food Energy giving, body buildings and Health giving. 5. Digestion of Foods. III. *Public Health Aspects of Nutrition* : As in item VI of Serial No. 1 (*a*) IV. *Nutritional Requirements and Planning Adequate Diets* : 1. Factors affecting. 2. Nutritional allowances recommended for— (*a*) Adults. (*b*) Adolescents boys and girls. (*c*) Pregnant and Nursing Women. (*d*) Young children. (*e*) Infants. (*f*) Aged. 3. Additional allowances for physical work stresses, sickness and special condition. 4. Using food composition tables for calculating the nutritive value of diet. V. *Principles of Food Preparation & Preservation* : 1. Principles of cooking.

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		2. Conservation of nutrients by proper cooking methods. 3. Personal cleanliness and cleanliness of kitchen and utensils. 4. Selection and utilisation of locally available nutritious food stuffs. 5. Use of protein rich foods. 6. Storage of food, preservation of vegetables and fruits suited to village economics, resources and needs. 7. Popularisation of new foods and recipes. VI. *Importance of increasing agriculture* : As in item XII of Serial Nos. 12. VII. *Approach to changing food habits and customs—conducting surveys and interpreting data* : As in item XI (1) of Serial Nos. 5 & 6 ; and How to conduct dietary surveys interpret the data and use the findings for Planning Nutrition Programmes. VIII. *Nutrition Education* : As in item IX of Serial No. 1 (*a*). IX. *Evaluation* : 1. Evaluation Pointers : (*a*) Nutrition education :- (*i*) Change in attitude towards protective foods. (*ii*) Use of new and unfamiliar foods. (*iii*) Method of cooking. (*iv*) Preservation advocated at the rural level. (*b*) Production—progress of :— (*i*) Kitchen gardening, (*ii*) Fruit trees, (*iii*) Other perennial plants leaves advocated, (*iv*) Poultry. (*c*) Feeding—Feeding centre beneficient groups covered, demonstrations, role of mahila mandals. X. *The Applied Nutrition Programme* : 1. Objectives, Philosophy, Increased food production especially protective foods at the village level for the benefit of rural families particularly vulnerable group.

ANNEXE III—*Contd.*

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		Improved distribution of foods.
		Nutrition Education aimed at consumption of increased amount of protective foods.
		2. Plan of Operations.
		3. Planning and implementing ANP—the role of the Gram Sevika in—her specific duties.
		4. Enlisting the cooperation of the village communities to achieve the objectives of the Applied Nutrition Programme.
		5. Evolving an integrated programme with other functionaries at village level.
		XI. *Study Tours* :
14. Gram Sevaks		1. Importance of nutrition in maintenance of health.
		2. Applied nutrition, its principles, concept, content and mode of operation.
		3. Working out an integrated programme dealing with public health aspects, production, distribution, preservation and utilisation.
		4. Nature of food—composition of food and classification of food.
		5. Recommended nutritional allowances for adults, adolescent boys and girls, pregnant and nursing women, young children, infants—additional calorie needs for physical work.
		6. Balanced diet—working out simple menus and diets for local areas.
		7. Under-nutrition and mal-nutrition, its recognition and effects on human body—diseases caused due to mal nutrition—deficiency of vitamins, iodine, calcium and iron etc.
		8. Value and importance of protective foods—balanced diets—supplementary meals.
		9. Avoidance of losses of nutrients during harvesting, storage, processing, milling, preservation and cooking.
		10. Utilisation of locally available nutritious food stuffs—Use of protein rich vegetables fruits—preservation of fruits and vegetables.
		11. Influence of income on structure of diets.
		12. Food habits in rural areas—best utilisation of money spent on food, specially in the lower income groups.

ANNEXE III—*Contd.*

1	2	3
		13. Importance of cereals, pulses, legumes, vegetables and fruits. 14. Role and importance of mixed farming. 15. Value of home, school and community gardens in nutrition. 16. Importance and value of milk, poultry, goats, piggery and fisheries—plans for their development. 17. Knowledge about local food customs and methods of approach to change existing food habits through the process of education and demonstration. 18. Importance and value of statistics and surveys in nutrition programme and specific role to be played by the village level workers. 19. Value and role of voluntary organisations like women's association, youth clubs, young farmers' clubs in nutrition programme. 20. Role of teachers and village level workers in improving the nutrition programme. 21. Role of village level workers in organising village affairs ; agricultural shows and demonstrations in order to spread the knowledge of food and nutrition.
	15. Chairmen of Block Panchayat Samitis, Chairmen and members of Production Committees and Chairmen of Welfare Committees of Panchayat Samitis, Sarpanches of Panchayats, Chairmen and members of Production and Welfare Committees of Panchayats and Panchayat Secretaries.	As at Serial No. 10.
	16. Instructors in Nutrition in Primary Teachers' Training Centres.	I. *Introduction* : 1. Importance of nutrition in the maintenance of health and for national economic development. 2. Particular importance of proper food and sound hygiene for infants and young children. 3. Responsibilities of teachers to help children to learn sound habits of diet and hygiene. II. *Objectives of the Expanded Nutrition Programme* : 1. Increased production and consumption of protective foods by the village people for the benefit of the village people, especially the children. 2. Importance of interesting parents in the development of school gardens and school meals.

ANNEXE III—*Contd.*

1	2	3

III. *Basic Principles* :

1. Nature and composition of food.
2. Different food groups, with particular reference to locally available foods and protein-rich foods.
3. Nature of balanced diets

IV. *Mal-nutrition* :

1. Principal kinds of mal-nutrition, especially of young children, with special emphasis of those which are commonly found locally. How they can be recognised, how they are caused.
2. Factors leading to mal-nutrition, *e.g.*, poverty, ignorance, apathy, inability to make good use of available resources.

V. *Food Hygiene* :

1. Reasons for the need of sound food hygiene.
2. Precautions, to avoid infection, to be taken in the handling, storage, transport, cooking and serving of food, with special reference to milk and school meals.
3. Personal hygiene—cooks and children ; cleanliness of kitchen and utensils.
4. Effect of inadequate environmental hygiene on nutritional status.

VI. *Prevention of Mal-nutrition* :

1. Essential need for increased production and consumption of 'protective foods'.
2. Balanced diets and the importance of proper meals for pre-school age and school children.
3. Special needs of children at different ages.
4. Importance of good school gardens.

VII. *Practical Cookery* :

1. Recipes for school meals.
2. Proper and hygienic methods for preparing and distributing milk.
3. Hygienic methods for preparing, cooking and serving school meals.

VIII. *Production of Food* :

1. Value and importance of school, community and home vegetable and fruit gardens.
2. Planning such gardens, nutritionally valuable fruits and vegetables which can be grown in these gardens. (These will vary according to climatic conditions.)
3. Need to obtain advice and help from Agricultural Extension Officers on the proper planning and maintenance of vegetable gardens ; use of good quality seeds ; use of fertilisers.

ANNEXE III—*Contd.*

1	2	3
		4. Importance of encouraging increased production and consumption of eggs, poultry, fish and milk ; how can these be achieved. IX. *Record keeping* : 1. Need for keeping, if possible, regular (monthly) records of the height and weight of each child in the school as a measure of their nutritional status. X. *Cooperation with other People* : 1. Special role of the school teacher. His importance and responsibility towards : (*i*) his pupils ; and (*ii*) the members of the local community. 2. Role of Women's Associations, Youth and Farmers' Clubs in helping to improve nutrition. 3. How women can help in the preparation and distribution of milk and school meals to the children. XI. *Nutrition Education* : 1. Importance of a general knowledge of simple basic facts of sound nutrition and food hygiene by all people. 2. What the child should know ; what he should be taught at different ages. 3. The value of school meals for teaching children the nutritional value of different foods and personal hygiene in handling food.
17.	Primary School Teachers (Women), Members of Mahila Mandals and Associate Women Workers, and 18. Primary School Teachers (Men).	1. Importance of nutrition for health. 2. Introduction to the programme of Applied Nutrition. 3. Understanding of different educational, production and distribution aspects of the programme. 4. Simple facts of type and quantity of food to eat—special value of certain articles of diet necessary for growth. 5. Types of mal-nutrition—contributory factors which lead to mal-nutrition. 6. What foods are necessary : (*a*) for growth and development of body. (*b*) for improving blood supply. (*c*) for preservation of good eyesight. (*d*) for expectant and nursing women. (*e*) special attention to the diet good for a child after weaning. 7. Examples of recommended diets using locally available food stuffs.

ANNEXE III—*Concld.*

1	2	3
		8. Diet for sick and the aged.
		9. Simple cooking procedures which retain the "Goodness" of articles of diet.
		10. Hygienic methods of handling and preparation of fresh and dry milk.
		11. Role of Mahila Mandals/Gram Sevikas/School Teachers in Applied Nutrition Programme.
		NOTE.—For men teachers, the emphasis should be on production activities.
19.	Members of Youth Clubs .	1. Importance of Nutrition in maintenance of health.
		2. Applied Nutrition, its concept and content.
		3. Recommended nutritional allowance for adults, adolescent boys and girls and young children.
		4. Problem of under-nutrition and malnutrition certain commonly met diseases—their prevention.
		5. Balanced diet—preparation of menus under available village resources.
		6. Losses of nutrients during harvesting, storage and processing etc.
		7. Utilisation of local available nutritious foodstuffs—preservation of fruits and vegetables in the local circumstances.
		8. Food habits in rural areas—importance of cereals, pulses, legumes, vegetables and fruits.
		9. Popularisation of home, school and community gardens, its economy and the nutritive value of the produce.
		10. Knowledge about milk, poultry, piggery and fisheries.
		11. Role of rural youth in the Applied Nutrition Programme by way of organising and assisting their parents in agricultural fairs, demonstration and publicity programmes.
		12. Role of girls in the applied nutrition especially in preservation, processing of food articles and preventing the waste.
20.	Fishermen	1. Net making—preservation of net—mending of net.
		2. Deweeding of tanks—manuring of tanks.
		3. Handling of fingerlings and stocking of tanks.
		4. Transport of fish fry.
		5. Methods of fishing.
		6. Handling of fish, icing, salting, packing, etc.
		7. Visit to a fish farm.
21.	Poultry keepers . . .	Practical training in poultry keeping.

ANNEXE IV

MODEL SYLLABUS SHOWING BREAK-UP OF SYLLABUS CONTENT IN TERMS OF THEORY AND PRACTICE WITH PROPORTIONATE ALLOCATION OF TIME

A. Syllabus for Instructors of Public Health & Nutrition

This outline is suggested on the assumptions that —

(1) to the extent possible the topics will be taught through practicals preferably in an Applied Nutrition Village ;

(2) the staff of the Training Centres will make suitable adjustments to the topics and time allotted considering the background and qualification of the trainees ; and

(3) the trainees come to the course with some basic information on the prevailing dietary practices, available food supplies and problems in their own areas.

Content	Practical Experience	Time in Hours		
		Theory	Practical	Total
I. *Introduction* :				
1. Nutrition—a multifaceted subject—Importance of nutrition in maintenance of health. 2. Relationship between nutrition, health status and working efficiency, production and economic development.	Recording the heights and weights of trainees and comparing them with the standards available. Discussion on Nutritional problems of their own areas. Panel discussion by block staff—B.D.O., Panchayat Chairman, Mukhya Sevik and others involved in the A.N.P. regarding its operation.	6	8	14
3. Local nutrition and health problems.	Visit to an A.N.P. Block to see the programme in action.			
4. The Applied Nutrition Programme—Philosophy, objectives and operational se -up.	Invite U.N. personnel to explain the role of U.N. in A.N.P.			
II. *Principles of Food and Nutrition* :				
1. Classification of locally available foods energy giving body building & health giving } (protective and regulatory)	Display of local foods classified as energy giving foods, body building foods and health giving foods.	8	8	16

2. Cmposition of foods : (*a*) Carbohydrates (*b*) Proteins (*c*) Fats (*d*) Minerals (*e*) Vitamins and (*f*) Water.	Studying the composition of foods through charts and diagrams. Screening films on Food and Health Food you did not eat. Digestion, etc. Compiling reference material on these topics.			
3. Their functions and sources.				
4. Effects of excesses and deficiencies.				
. Factors which influence the digestion and utilisation of foods, such as : status of health intestinal infections, emotional stresses, rest and relaxation, and mealtime environment.				
III. *Nutritional Requirements and Planning of Adequate Diets* :				
1. Factors affecting nutritional requirements.	Exercises on how to use Food Composition Tables.	8	18	26
2. Concept of " Recommended nutritional allowance ".	Calculations of the Nutritional requirements of a reference family.			
3. Recommended nutritional allowances for : (*i*) infants ; (*ii*) young children ; (*iii*) adolescents—boys and girls ; (*iv*) adults—male and female ; (*v*) pregnant and nursing women ; and the (*vi*) aged.	Computation of the foods needed to fulfil the requirements calculated.			
4. Additional allowances for physical work and special conditions.				
5. Food Composition Tables—Uses and limitations.				

ANNEXE IV—*Contd.*

Content	Practical Experience	Time in Hours		
		Theory	Practical	Total
IV. *Food Budgeting* :				
1. Influences of income on the structure of diets. 2. Making the best use of the money spent on foods, especially in the lower income groups —proper selection and purchase of foods. 3. Planning adequate diets for families based on recommended nutritional allowances at different income levels.	Calculating the cost of the estimated food for the reference family using foods within varying price ranges to suit the income of different families. Experiences in selecting foods and purchasing food. Planning different menus using the different estimated quantities to fulfil nutritional requirements at different levels of income. Study of the dietary modifications to be made in the case of families who cannot afford even the minimum cost such as inclusion of foods available free of cost, use of low cost unfamiliar foods.	4	6	10
4. Calculation of the nutritive value of the diets planned.	Study of the modifications required in other items of budget to give priority to food.			
V. *Principles of Food Preparation and reservation*:				
1. Principles of cooking ; Conservation of nutrients by proper cooking methods. 2. Personal cleanliness and cleanliness of kitchen and utensils. 3. Selection and utilisation of locally available nutritious foodstuffs—Use of protein rich food.	Demonstration on and Practice of *e.g.* methods of cooking which help to retain nutrients and flavour without loss of palatability. Cooking of vegetables with the least amount of water for the shortest time avoiding reheating, overboiling, or straining of cooking water. Use of devices such as hay boxes, and steamers. Avoiding use of alkalis. Use of unfamiliar foods in popular forms.	8	18	26
4. *Storage* of food ; preservation of vegetables and fruits suited to village economics, resources and needs.	Practice in improvising methods for domestic methods of storage of food and studying the effectiveness of these methods. Discussions on the indigenous methods of the preservation of foods and adaptation of such methods to suit conditions in their own areas.			

VI. *Public Health Aspects of Nutrition* :				
1. Relation of food to growth and health.	Displays illustrating signs of good nutrition and mal-nutrition through pictures, photographs, slides, etc. Preparation of a check-list on the kitchen and on food service.	8	8	16
2. Under-nutrition and mal-nutrition—distinction between :				
Under-nutrition—food requirements in quantity and in quality are not provided according to age, sex and occupation. Mal-nutrition—unbalanced provision of nutrients and/or defective utilisation. With reference to local conditions in trainees' areas,	Discussion on and application of findings. Examination under the microscope of cultures of swabs from hands and utensils.			
(*a*) contributory factors ; poverty, ignorance, lack of availability and/or non-utilisation of available resources.	Showing of and discussions on examples of spoilt foods. Demonstration of foods spoilt due to faulty storage. Examination of foods preserved under faulty conditions. Discussion on food adulteration.			
(*b*) the vulnerable groups affected and reasons (expectant and nursing mothers, children).				
3. Hygiene of :				
(*a*) The foodstuffs: fresh, stale, spoiled, contaminated, adulterated. Dangers of food spoilege and food adulteration.				
(*b*) Food handler—1. health status. 2. personal cleanliness especially hands and finger nails. 3. hygienic habits—coughing, cleaning nose, spitting, latrine use, hand-washing, etc. 4. Cleanliness of hands for eating.				
(*c*) Environment—1. Safe water (boiling). 2. sanitary disposal of faces and urine.				

ANNEXE IV—*Contd.*

Content	Practical Experience	Time in Hours		
		Theory	Practical	Total
3. protection against rats, flies, etc.				
4. cleanliness of kitchen and utensils.				
(*d*) Precautions during storage, handling. cooking, transport, distribution, serving and eating of food.				
(*e*) Food poisoning.				
(*f*) Food inspection.				
(*g*) Food legislation.				
4. Nutritional deficiency diseases :				
(*a*) Protein—calories deficiencies (Kwashiorkor —morasmus anaemis) causing stunted growth and weakness.				
(*b*) Rickets.				
(*c*) Goitre.				
(*d*) Anaemia.				
(*e*) Nightblindness, Beriberi, Scurvy, etc.				
5. Diseases due to toxicants, latherism.				
6. Inter-relation and inter-action of intestinal diseases such as diarrhoea, dysentry, worms, etc. and mal-nutrition.				
VII. *Community feeding such as school lunch programmes—other fooding programmes* :	Visits to school lunch programmes and study of their menus. Wherever possible participation in the planning, preparation and serving of school lunches. Planning of suitable menus for use in their own localities.	3	10	13

VIII. *Food Production in the home, school and community* :				
1. Importance of the production of protective foods in the Applied Nutrition Programme through school, home and community gardens : Fruits, Vegetables, Eggs, Fish, Dairy Products.	Discussions led by specialists and visits to suitable projects.	3	4	
IX. *Nutrition Education* :				
1. Importance of nutrition education. 2. Study of local food customs and habits. 3. Individual and groups requiring nutrition education. 4. Methods of approach to change food habits—knowledge, attitude and skills.	Discussions on techniques of eliciting information on diet habits and practices. Conducting a survey on a selected sample. Analysis of the data. Use of the data and the findings. Interpretation of the data in terms of the foods included in the daily meals, cooking, practices and beliefs about food.	5	10	15
5. Use of education and aids : (*a*) A.V. aids. (*b*) Preparation of exhibits. (*c*) Demonstration for mass and groups. (*d*) Mobile Vans.	Discussions on methods used during this course regarding their suitability for imparting Nutrition Education to the G.S.T.C. trainees. Suggestions for the adaptation of such methods to suit the village community. Practice of appropriate methods in the villages.			
6. Importance of fitting current scientific knowledge of nutrition to local conditions and local food habits and avoidance of violent changes in local pattern influenced by religious beliefs and traditional cultural patterns.				
7. Locally available foods and recognition of their food values.				
8. Popularisation of new and unfamiliar foods.				

ANNEXE IV—*Contd.*

Content	Practical Experience	Time in Hours		
		Theory	Practical	Total
X. *Role of Instructors in Public Health and Nutrition in A.N.P* :				
(*i*) In making Gram Sevaks/Sevikas nutrition-conscious, and improving their diets and health ; and	Discussion of the role of the Instructors in Public Health and Nutrition.	..	6	6
(*ii*) In preparing Gram Sevaks/Sevikas to work efficiently for the A.N.P. in the Block.	Planning of appropriate schemes to help the G.S.T.C. trainees become nutrition-conscious.			
XI. *Implementation of the Applied Nutrition Programme* :				
1. Content of Applied Nutrition Programme.	Visit and study the implementation of the programme in an A.N.P. Block.	..	6	6
2. Plan of operations and other details, including role of different block functionaries.				
3. Planning of the programme.	Opportunity to observe a block-level coordination meeting of the A.N.P.			
4. Groups to be involved in promoting the programme and their training, *e.g.* Yuvak and Mahila Mandals.				
5. Vital role of families and school teachers in improving nutrition.	Opportunity to participate in any aspect of the A.N.P., *e.g.* activities of the Mahila Mandal, Yuvak Mandal, etc.			
6. Role of (*a*) participating agencies in A.N.P. at the village, block and Central levels, (*b*) functionaries at various levels and their training.				
7. Role of International agencies—UNICEF, FAO and WHO.				
8. Importance of team approach at various levels.				

XII. *Surveys and Evaluation* :				
1. Types of surveys :	Practical field work for conducting diet surveys of various income groups in different occupations namely : farmers, labourers, school teachers, children of various age groups etc.	2	10	12
(*a*) Dietary ;				
(*b*) Food consumption ;				
(*c*) Economics including food production, family composition, family occupations and resources in land, livestock, crops, cash income, etc.				
2. Criteria for Evaluation.				
	TOTAL .	55	112	167

ANNEXE IV *Contd.*

ILLUSTRATION OF THE DISTRIBUTION BETWEEN THEORY AND PRACTICE IN THE SYLLABUS OF A.N.P. TRAINING

B. Training of Instructors (2 weeks' course)

	Time in Hours		
	Theory	Practical	Total
1. Introduction	3	4	7
2. Principles in Foods and Nutrition	4	4	8
3. Nutritional Requirements	4	6	10
4. Planning meals	2	2	4
5. Public Health aspects of Nutrition	4	4	8
6. Methods of food preparation, Preservation and storage—Prevention of wastage of Nutrients	4	6	10
7. Methods of approach to change food habits—community feeding	3	6	9
8. Nutrition Education	2	4	6
9. Increasing Food Production (to be included in the present Syllabus)	4	4	8
10. Role of Instructors in the A.N.P.	..	6	6
11. Implementation of the A.N.P.	..	7	7
12. Survey and Evaluation	2	5	7
TOTAL	32	58	90

C. Nutrition training in the basic courses for Gram Sevikas and Bal Sevikas

	Time in hours		
	Theory	Camp Practice	Field Practice
I. Introduction	4	..	8
II. Basic Principles of Nutrition	6	8	4
III. Public Health Aspects of Nutrition	10	36	4
IV. Nutrition Requirements and Planning adequate Diets	10	20	10
V. Principles of Food Preparation and Preservation	6	20	5
VI. Importance of Increasing Agriculture	10	20	10
VII. Approach to changing food habits and customs—conducting surveys and interpreting data	8	8	20
VIII. Nutrition Education	6	20	10
IX. Evaluation	5	..	15
X. The Applied Nutrition Programme	10	8	30
TOTAL	75	140	116

ISSUES FOR CONSIDERATION OF THE WORKSHOP ON A.N.P. TRAINING

(*February 28 to March 2, 1966*)

A. *Assessment of impact* :

I. What were the objectives in organising training in Applied Nutrition Programme of :

(*a*) Gram Sevaks and Gram Sevikas,

(*b*) Mukhya Sevikas,

(*c*) Medical Officers of Primary Health Centres,

(*d*) Para-medical personnel,

(*e*) State Nutrition Officers,

(*f*) District Level Officers (General Administrators and Technical Officers),

(*g*) Elected Representatives,

(*h*) Members of Yuvak and Mahila Mandals, and

(*i*) Poultry breeders, fishery breeders etc.

II. How should the assessment of the impact be made to meet our *immediate* requirements ? Which are all the existing sources of material on this aspect ?

III. What has been the impact from the point of view of understanding :

(*a*) the importance of Nutrition, and

(*b*) the different aspects of Applied Nutrition Programme.

IV. Have the different categories of field workers acquired knowledge and skills in an adequate measure, as a result of the training ?

V. Has the training been satisfactory from the point of view of :

(*a*) Duration,

(*b*) Content, and

(*c*) Relation to local conditions.

VI. Have the training institutions now being utilised proved satisfactory from the points of view of :

(*a*) Quality of trainers, and

(*b*) Adequacy of equipment.

VII. What is the quality of training given in short duration camps in the blocks/districts ?

B. '*Nutrition*' *in basic pre-service or in-service training* :

I. What is the 'Nutrition' content in the present training of :

(*a*) Gram Sevaks,

(*b*) Gram Sevikas,

(*c*) Mukhya Sevikas,

(*d*) School teachers,

(*e*) Para-medical personnel, and

(*f*) Instructors in training centres.

II. To what extent can training in Applied Nutrition Programme be incorporated into their basic training ?

III. Can the *ad-hoc* training in Applied Nutrition Programme be dispensed with for these categories ?

C. *Coverage* :

I. Is the present coverage of the training programme adequate ?

II. Are there any other categories of persons, for whom training in Applied Nutrition Programme will be useful ?

III. Are there any superfluous categories in the present ANP training programme, for whom training is unnecessary ?

D. *Ad hoc Training Courses* :

I. In what manner can each of the present courses be strengthened from the point of view of :

(*a*) technical content,

(*b*) teaching of extension techniques, with special reference to ANP,

(*c*) relationship with field conditions, and

(*d*) meeting the job requirements of the functionaries concerned.

II. What should be the venue of these courses ?

III. Who would be the trainers for non-institutional training programmes ?

E. *Refresher Training* :

I. Is refresher training required for those categories, whose initial training in Applied Nutrition Programme is essentially orientation training ?

II. Which are the categories who require refresher training ?

III. At what interval should the refresher training follow the initial training ?

IV. Should there be specially tailored courses for those whose initial training is now considered inadequate ?

V. How is the cost of the refresher training to be met ?

F. *Teaching methods and Teaching material* :

I. What are the improvements required in the teaching methods including curriculum planning ?

II. How can the teaching material in the shape of text books, guide books, etc., be improved ?

G. *Number of persons to be trained* :

I. What is the backlog in training in the States, where ANP is already under implementation ?

II. What is the estimated turnover among the persons already trained ? What should be the arrangements for their training ? How should the cost of such training be met ?

III. What will be the order of number of persons to be trained in the new blocks to be started ?

IV. What will be the number of persons for refresher training ?

V. Can any time schedule be suggested for the States newly taking up ANP ?

H. *Training Institutions* :

I. Which are the additional institutions to be brought into the training programme in the different States, specially in the context of the expansion of the programme ?

II. Are the existing institutions adequately equipped in regard to audio-visual equipment, demonstration equipment, dormitory and other facilities ?

III. Does the campus life at the training centres provide live demonstration of the principles which the training seeks to spread ?

IV. In what manner can the interest of the teaching staff in ANP be maintained ? To what extent will seminars of the teaching staff at periodical intervals prove useful ?

V. In what manner can the training centres take an active part in the appraisal of the programme in the neighbouring blocks ?

I. *Regional/National Centres* :

I. Which are the categories, who can be trained at regional/national centres, keeping in mind :

(*a*) the duration of the courses,

(*b*) ability to follow instruction in English,

(*c*) the wide variations in food habits in the different States, and

(*d*) expenditure on travel.

II. What will be the number of such trainees and how many centres will be required ?

III. What other functions can such centres perform, particularly in regard to research, production of literature, etc. ?

IV. Can any of the existing institutions be utilised for this purpose ?

J. *Evaluation* :

I. What should be the arrangement for concurrent evaluation of ANP training ?

II. Should each institutional course be evaluated ?

III. What should be the follow-up arrangement to see how the trainee functions on the field ?

IV. Should a full-scale evaluation study be organised ?

(*c*) Mukhya Sevikas,

(*d*) School teachers,

(*e*) Para-medical personnel, and

(*f*) Instructors in training centres.

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III. Are there any superfluous categories in the present ANP training programme, for whom training is unnecessary ?

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II. Are the existing institutions adequately equipped in regard to audio-visual equipment, demonstration equipment, dormitory and other facilities ?

III. Does the campus life at the training centres provide live demonstration of the principles which the training seeks to spread ?

IV. In what manner can the interest of the teaching staff in ANP be maintained ? To what extent will seminars of the teaching staff at periodical intervals prove useful ?

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I. Which are the categories, who can be trained at regional/national centres, keeping in mind :

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(*d*) expenditure on travel.

II. What will be the number of such trainees and how many centres will be required ?

III. What other functions can such centres perform, particularly in regard to research, production of literature, etc. ?

IV. Can any of the existing institutions be utilised for this purpose ?

J. *Evaluation* :

I. What should be the arrangement for concurrent evaluation of ANP training ?

II. Should each institutional course be evaluated ?

III. What should be the follow-up arrangement to see how the trainee functions on the field ?

IV. Should a full-scale evaluation study be organised ?

K. *Supervision of the training programme* :

I. What should be the role of :

(*a*) State Director of Training,

(*b*) State Nutrition Officers,

(*c*) Lady Project Officers,

(*d*) Collector/Chief Executive Officer,

(*e*) Regional and District Level Technical Officers,

(*f*) Block Development Officer,

(*g*) Other Officers, and

(*h*) Presidents of Zila Parishads and Pradhans of Panchayat Samitis, in regard to :

(*i*) Institutional training ; and

(*ii*) non-institutional training.

II. In what manner can reporting of information on ANP training be improved ?

L. *Role of Voluntary Organisations* :

In what manner can voluntary organisations be involved in the training programme ?

M. *Production of general educational material on A.N.P.* :

What steps can be taken to intensify production of films, posters, booklets, etc., on ANP, which would be of value for nutrition education in the rural areas ?

BACKGROUND PAPERS

PLACED BEFORE THE

WORKSHOP

on

APPLIED NUTRITION TRAINING

held from

FEBRUARY 28 TO MARCH 2, 1966

BACKGROUND PAPER NO. 1

IMPACT OF TRAINING UNDER THE APPLIED NUTRITION PROGRAMME

Paper prepared by Deptt. of Community Development, Ministry of F.A., C.D.& C.

Objective: Since the Applied Nutrition Programme is primarily educative in character and seeks to disseminate knowledge of the fundamentals of correct nutrition and the production and preparation of protective foods, the training component of the programme is, clearly, important. As the Master Plan of Operation sets out, the training aspects of this programme are to be developed, "in such a manner that it eventually makes an impact at all levels in the community, namely at the national, state, district, block and village levels and among all planning, administrative and technical officers associated with the programme, teachers in Colleges of Agriculture, Veterinary Science, Human Nutrition and Home Science, appropriate public health institutions concerned with the training of public health workers, teachers in Gram Sevak and Gram Sevika Training Centres, Social Education Organiser's Training Centres, block level officials, village level workers, members of Panchayati Raj institutions, non-official and voluntary organisations and above all, the farmers and the villagers themselves".

2. *Pattern of Training:* It was recognised, however, that it would take considerable time and study to achieve fully these objectives. As a first step, therefore, the training effort was to be concentrated on the following categories:—

(*a*) technically or professionally qualified persons who would be required to serve in a full time capacity as State Nutrition Officers or Assistant State Nutrition Officers and who would thus be responsible for the overall technical direction, supervision and evaluation of the project;

(*b*) state, district and block medical and health staff, primarily associated with personal and community hygiene and promotion of health in rural areas. These would include medical officers in charge of Primary Health Centres, Health Inspectors, Public Health Nurses, Lady Health Visitors, Auxiliary Nurse-midwives, midwives and auxiliary health workers;

(*c*) professionally qualified persons who were responsible for nutritional instruction in training centres, such as teachers in Gram Sevak and Gram Sevika Training Centres, Mukhya Sevika Training Centres, etc. and those responsible for nutritional instruction, guidance and supervision at district and block levels;

(*d*) Gram Sevaks and Gram Sevikas;

(*e*) all those, officials as well as non-officials, who were directly connected with the Community Development programme though not associated with any formal teaching of nutrition. These included District Planning Officers, Block Development Officers, Block Level Extension Officers and administrative officers connected with other welfare programmes; and

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(*f*) persons who, in the course of their normal duties, were in a position to influence and guide members of village community in improving hygiene and nutrition standards, such as office-bearers and members of Panchayati Raj institution, school teachers, Yuvak and Mahila Samitis and interested villagers.

3. The Master Plan of Operations envisaged, as a second phase, the eventual development of a fully coordinated and comprehensive training programme in Applied Nutrition and related subjects, by providing permanent training facilities for future teachers in human nutrition in Agricultural Colleges, Colleges of Veterinary Science, Home Science Colleges and appropriate health institutions and for those who would be appointed as Nutrition Officers and Food and Nutrition Advisers at Central and State Government levels.

4. The focus of training under the Applied Nutrition Programme has so far, naturally, been on the first phase of training. The training pattern incorporated in the Subsidiary Plans of Operations of the States, has been largely on the lines formulated in 1962 by the Sub-Committee on Training. Broadly, the training which is imparted can be regarded as of three kinds—(*i*) the training of the trainers, (*ii*) job training of workers primarily connected with implementation of the programme, and (*iii*) orientation training of supervisory personnel and non-officials concerned with the programme. The venue for the different types of training has been generally as follows:—

(*a*) *Trainers' Training:*

In Uttar Pradesh, the State Government made its own arrangements for training its Instructors. To cater for the other States, the training was organised on an *ad hoc* basis at three Regional Centres, *viz.*, Shri Avanashilingam Home Science College, Coimbatore, Allahabad Agricultural Institute, Allahabad and Faculty of Home Science, University of Baroda. This part of the training programme having virtually come to a close in its first phase, the regional centres were closed down during the later part of 1965.

(*b*) *Job Training:*

This had to be institution-based, as requisite staff and demonstration facilities had to be available. Thus, Gram Sevak and Gram Sevika Training Centres, Agriculture, Animal Husbandry and Home Science Colleges, Social Education Organisers' Training Centres and Mukhya Sevika Training Centres have provided the local for training the bulk of the field level functionaries. Medical and para-medical personnel, however, have received their training at the State Public Health Institutes or at one of the three Orientation Training Centres located at Najafgarh, Singu and Poonamallee.

Eight Officers at the state level have been trained at the London School of Hygiene and Tropical Medicines; a course of practical training at Ibadan in Western Nigeria has been an integral part of their training abroad.

(*c*) *Orientation Training:*

In view of the nature and short duration of orientation training this has been carried out mainly by organising camps within the blocks where the Applied Nutrition Programme has been taken up.

5. *The Training Syllabus:* The Sub-Committee's report of 1962 sets out the details of the syllabus of the training course of each category of persons requiring to be trained under the Applied Nutrition Programme. It may be observed that the Sub-Committee drew up, what might be described, as, a 'master syllabus', which comprehended all the aspects of A.N.P. training. With the 'master syllabus' as the base, the syllabi for different types of functionaries were drawn up, keeping in view the nature of functions expected of each of them. It was assumed, however, that the State Governments would make adaptations in the syllabi to suit local requirements.

Subsequently, the Working Sub-Group, set up by the Training Sub-Committee in 1964 to examine the nature of trainers' training, which was being imparted at the three regional centres, suggested a revised syllabus for the two weeks, course, *vide* Appendix I.

6. *Progress of Training:* While drawing up the blue-print for training under the Applied Nutrition Programme in 1962, the Sub-Committee listed 22 categories of persons, for whom training was to be organised. The number of persons in each category to be covered by the training programme, is specified in the Subsidiary Plans of Operations of each State. The statement at Appendix II gives a picture of the progress in the training programme in terms of the number of persons trained so far. Some of the high-lights are:—

(*a*) *Training trainers:*

The target was to train four Instructors of each Gram Sevak Training Centre and two each of the Gram Sevika, Mukhya Sevika and Social Education Organisers Training Centres. This target has practically been fulfilled. Till the end of 1965, 490 Instructors had been trained at the Regional Centres as well as under the separate arrangements made by Uttar Pradesh government. To cater for the small balance left over, a special course is being conducted from 14th February, 1966 at the Provincial Hygiene Institute, Lucknow. It has to be pointed out, however, that the number of Public Health Instructors, at the Gram Sevak Training Centres, who have been trained so far is only 27. This is due mainly to the fact that many of the Gram Sevak Training Centres do not have separate Public Health Instructors.

(*b*) *Training of officials and non-officials:*

The total number of persons required to be trained as per the Subsidiary State projects, the Plans of Operations for which have already been signed or are under final stage of negotiation, is nearly 67,000; as against this, a little over 28,000 people have been trained so far.

7. *The State-wise position is summarised below:*

Kerala: Training of trainers has been completed. The progress in the training of village level personnel has been good; but training of medical and para-medical personnel has lagged behind.

Madhya Pradesh: While the training of four Instructors per Gram Sevak Training Centre has almost been completed, as per the general all-India pattern, the subsidiary Planops of this State contemplate training of all Instructors. This can be considered after the initial

phase of training has been completed. Training of other personnel is far short of the target in every category, with the exception of medical officers, whose training has been completed.

Mysore: Mysore has completed the training of trainers, school teachers and Gram Sevaks. On the other hand, training of block personnel and non-officials has been slow.

Orissa: Good progress has been made at all levels in Applied Nutrition Programme training in this State.

Punjab: The training programme in this State got off to a rather late start. Latterly, however, it has been intensified, but there is still a large back-log to be made up.

Uttar Pradesh: The position is generally satisfactory. Only in the training of medical personnel and non-officials, is there a relatively large back-log of training.

West Bengal: Training had not been given adequate attention in this State so far; recently, however, the State Government has commenced running of training courses.

8. *Impact of training:* An overall assessment of the impact of the Applied Nutrition Training Programme is by no means easy. The large number of persons involved, the variety of backgrounds from which they are drawn and the diverse emphasis in their training, make it difficult to evaluate, how far the training has succeeded in fulfilling its objective. However, some of the studies made by perceptive individuals and by the Programme Evaluation Organisation throw some light on a few of the weaknesses of the training programme. While a comprehensive assessment has not been made so far, the available material provides a basis to judge the directions in which the training programme requires to be strengthened. The main observations in regard to applied nutrition training, as can be gathered from these reports, summarised are below:—

(1) *Report of Dr. R. Buzina, Regional Adviser on Nutrition, World Health Organisation*

The Report of Dr. Buzina refers mainly to the training of medical and para-medical personnel; it has also to be kept in mind that this report was made in 1961, at a time when concerted effort had yet to be made in regard to applied nutrition training. The main points in Dr. Buzina's report are:—

(*a*) Even though Nutrition is included as a topic under "Hygiene and Nutrition" in the training of midwives, the implementation varies from one Training Centre to another; in general, there are no facilities for teaching practical dietetics.

(*b*) Lack of tutorial staff and facilities for practical work come in the way of an effective teaching of nutrition at the Nurses' Training Institutions.

(*c*) The same defects as in the case of midwives and nurses, is apparent in the nutrition training of Health Visitors.

(*d*) The intensity and quality of teaching in nutrition varies considerably in different Medical Colleges and are not very satisfactory. The nutrition training given in the courses on paediatrics and internal medicine is often insufficient; particularly, dietetherapy based on locally available food stuffs is neglected.

(*e*) The training of nurses, mid-wives and Health Visitors could be improved by training their tutorial staff, establishing facilities for practical dietetics, with space and utensils for dietetics kitchens and encouraging practical field work in a Rural Health Centre or demonstration area.

(*f*) The training of highly qualified nutritionists should be improved; this could be undertaken partly in Calcutta, where it could be combined with work in Hyderabad and possibly in Bombay for a certain period or by the National Nutrition Research Laboratory, which could give post-graduate diploma training if it were possible to offer training in Public Health at Hyderabad.

(*g*) Training in Public Health nutrition alone is not enough to enable the State Nutrition Officer or Nutrition Adviser to carry out his duties adequately. He should be given basic courses in food production and planning so that he would be prepared to work closely with agriculturists and economists and to advise them in their complicated task of good planning.

(*h*) The training of future Nutrition Advisers could not be achieved in one year. More time should be devoted to institutional as well as field work, and two years of training should be considered as a minimum.

(*i*) Syllabus for training in nutrition should be developed for the various departments of Medical Colleges such as Biochemistry, Physiology, Pathology, Internal Medicine and Social and Preventive Medicine.

(*j*) Seminars on food production and planning, on the importance of agricultural research on food technology and on legislation should be organised.

(2) *Programme Evaluation Organisation Report on Current Evaluation of the Applied Nutrition Programme*, 1964-65

At the instance of the former Ministry of Community Development and Cooperation, the Programme Evaluation Organisation understood towards the end of 1964 a quick current evaluation of the Applied Nutrition Programme, as it was being implemented in the States of Andhra Pradesh, Madras, Orissa and Uttar Pradesh. The Evaluation Report had the following comments to make in regard to training—

(*a*) Relative to the total number of persons to be trained as per the Subsidiary Plans of Operations, the number actually trained showed an achievement of about 30 per cent. The progress, had, therefore, not been up to the mark.

(*b*) To ensure uniformity in the scope and content of training, detailed syllabi should be worked out for each category of training. In preparing the syllabus, the help of the concerned departments should be sought and the syllabus so prepared should be periodically examined and revised in the light of practical field experience.

(*c*) More stress should be given on job orientation and the practical aspects of training. More field trips and field studies should be arranged for imparting the needed practical bias.

(*d*) In Andhra Pradesh, persons trained for poultry keeping did not undertake poultry farming. Training for pisciculture given to non-fishermen in Uttar Pradesh, or even to fishermen in Andhra, did not directly benefit the pisciculture programme. Again training given to representatives of Mahila Mandal and Gram Lakshmis in Andhra was not effectively utilised for the supplementary feeding programme. These illustrations suggest the need for selecting the right persons for training. If, in order to attract the right persons for training, it is necessary to raise the stipend, it is better to do so.

(*e*) There is a considerable wastage through transfer of trained staff.

(*f*) In implementing the training programme, an oft-mentioned difficulty was that of non-availability of personnel to fill the vacancies during the period of training.

(*g*) Non-official trainees find it inconvenient to undergo training at distant training centres. The timings of the training should also avoid, as much as possible, the busy seasons of the usual activity of the non-officials to be trained.

(*h*) Except for some attempt in Uttar Pradesh, no proper system has been evolved for evaluating the effectiveness of the training programme by assessing the reactions of the trainees and the trainers.

(*i*) Specific institutional support has to be provided to the programme by the Training Centres, including practical guidance and supervision, besides receiving the feed back from the field. Even when the programme reaches the phase of expansion in coverage it will be desirable to work out a system for maintaining contacts and links between the blocks and the training institutions.

(3) *Report of the Working Sub-Group on Training in Applied Nutrition Programme*

A Sub-group was set up by the Sub-Committee on Applied Nutrition Training in 1964. Though it was concerned mainly with the training provided at the former Regional Training Centres, many of the general observations made by the Sub-Group are pertinent to the wider problem of Applied Nutrition training. These are:—

(*a*) The syllabus was too comprehensive to be covered adequately and usefully within the period of training.

(*b*) While good technical nutrition information was presented, there was no much opportunity to see it in practice in the field. Also, not enough was included on how to reorganise this information for passing on to other trainees under them or to the village people.

(*c*) In some cases, the training suffered as there was either no block programme in the immediate area or the block programme had not been adequately developed.

(*d*) The trainees did not get enough time for discussing matters pertaining to the role which they were to play under the Applied Nutrition Programme in the institutions and in the field where they worked.

(*e*) Practical teaching was handicapped by lack of teaching materials and facilities.

(*f*) For some of the trainees, the training largely covered the same ground as that studied by them earlier.

(*g*) Many trainees arrived at the courses without any knowledge of why they had been sent and without proper understanding of what they were expected to do after the training under the Applied Nutrition Programme.

(*h*) There was a large wastage due to transfer.

(*i*) There was need for more emphasis on curriculum planning, development of lesson plans, etc. Groups discussions for pro- blem solving, food selection and cooking, demonstrations and similar teaching techniques found ready response from the trainees.

(*j*) The practices in hostels and messes did not conform to what was taught in the courses.

(*k*) Important health aspects of the programme were not fully stressed during the training and the trainees had little appreciation of the inter-relationship of health practices, disease and nutrition and little knowledge of the main health problems in their own community.

9. *Conclusions*: As mentioned at the outset, it is difficult to make an overall assessment of the quality and impact of the training which has been organised till now under the Applied Nutrition Programme. To a large extent the critical material available in this respect is subjective in character; in some ways, this is perhaps inevitable, considering the nature and scale of the training. It might, however, be safe to conclude that the training has created an increased awareness of nutritional problems at least in some sections of the general community. It is clear, at the same time, that in the light of experience gather-ed over the past few years, a systematic effort has to be made to strengthen the training programme so that it can make a more significant contribution the spread of nutrition education in the country.

APPENDIX I

Revised syllabus for the Two weeks' Training Courses in Applied Nutrition for Instructors other than in Public and Instructresses other than in Nutrition of Gram Sevak/Sevika Training Centres

Objectives of the course:

1. To develop an appreciation for importance of nutrition in maintaining health.
2. To become aware of the local nutritional problems and ways of combating them.
3. To gain an understanding of the Applied Nutrition Programme, its objectives and operation.

SYLLABUS

I. *Introduction:*

1. Nutrition—a multifacet subject.
2. Importance of national health status in production and economic development.
3. Importance of nutrition in maintenance of health.
4. Local nutrition and health problems, based on surveys (where possible).
5. Applied Nutrition Programme as an integrated educational programme dealing with production, distribution and consumption.

II. *Foods:*

1. Constituents of food, their functions and sources, and effects of their excess and deficiencies:
   (*a*) Carbohydrates
   (*b*) Proteins (animal and vegetable)
   (*c*) Fats
   (*d*) Minerals
   (*e*) Vitamins
   (*f*) Water.
2. Classification of foods with special reference to locally available foods.
3. Factors such as status of health, intestinal infections, emotional stresses, rest and relaxation and mealtime environment affecting digestion and utilisation of foods.

III. *Nutritional Requirements:*

1. Meaning of nutritional requirements.
2. Factors affecting nutritional requirements.
3. Nutritional allowances recommended by ICMR for:
   (*a*) Adults—male and female
   (*b*) Adolescent boys and girls
   (*c*) Pregnant and nursing women
   (*d*) Young children
   (*e*) Infants.
4. Use and limitation Food Composition Tables.

IV. *Planning Meals:*

1. Planning meals to meet nutritional requirements of individuals, families and groups (with emphasis on vulnerable groups) with due regard to:
   (*a*) cost;
   (*b*) availability;
   (*c*) customs.

V. *Public Health Aspects of Nutrition:*

1. Relation of Food to growth and health.
2. Under nutrition and mal-nutrition—distinction between:
   Under nutrition—food requirements in quantity and in quality are not provided according to age, sex and occupation.

   Mal-nutrition—unbalanced provision of nutrients and/or defective utilisation.
   (*a*) with reference to local conditions in trainees' area.
   (*b*) *contributory factors:* poverty, ignorance, lack of availability and/or wastage and non-utilisation of available resources.
   (*c*) vulnerable groups affected and reasons (excepting and nursing mothers, children sick, aged).
3. (*a*) *The food stuff*—fresh, stale, spoiled, contaminated, adulterated.
   —protective food (rich in protein, animal and vegetable sources).
   (*b*) *Food handler*—
   1. health status.
   2. personal cleanliness, especially of hands and finger nails.
   3. hygiene habits—coughing, cleaning nose, spitting, sluicing, latrine use, handwashing etc.
   4. cleanliness of hands for eating (*use of soap*).

   (*c*) *Environment*—
   1. safe water (boiling).
   2. sanitary disposal of faeces and urine.
   3. protection against rats and flies etc.
   4. cleanliness of kitchen and utensils.

   (*d*) Precautions during storage, processing, handling, cooking, transport, distribution, serving and eating food.
4. *Diet*—Adequate diet—protective foods.
5. Part played directly and indirectly by an inadequate diet in causing sickness and death.
6. *Nutritional Diseases:*
   A. Due to insufficient amount of food/nutrients:
   1. *Protein—Calories Deficiencies* (Kwashiorker marasmus anaemia) causing oriented growth, weakness, etc.
   2. *Mineral Deficiencies:*
      Iodine causing goitre, enlarged thyroid gland—flourine causing dental caries.
      —calcium causing rickets, bowlegs etc.
      —iron causing anaemia.
   3. *Vitamin Deficiencies:*
      —Vitamin A leading to night blindness, anaemia etc.
      —B-Complex leading to pellagra, beri beri, anaemic unhealthy skin, depression, weakness, etc.
      —Vitamin C leading to scurvy, causing tiredness, bleeding gums, swollen legs and joints etc.

—Vitamin D leading to rickets causing bowlegs and other deformities.

B. Due to excess of food, causing obesity.

C. Due to toxicants, latherism.

7. Inter-relation and inter-action of intestinal diseases such as diarrhoea, dysentries, worms etc. and mal-nutrition.

VI. *Prevention of wastage of Nutrients:*

1. Losses of nutrients during harvesting, storage, processing, preservation and during preparation and cooking of foods.
2. Conservation of nutrients by proper methods of storing, handling, pre-planning and cooking.
3. Some understanding of methods suitable for village conditions for preservation of fruits and vegetables.

VII. *Methods of approach to change food habits:*

1. Study of local food customs and habits.
   (*i*) General—Vegetarianism due to religious beliefs and non-availability of animal foods.
   (*ii*) Specific, as it affects weaning of children
   —feeding of toddlers
   —feeding of pregnant women
   —feeding post partum and nursing women.
   (*iii*) Nutrition Education and those who can help to spread nutritional knowledge.
   (*iv*) Importance of fitting current scientific knowledge of nutrition to local conditions and local food habits.

VIII. *Nutrition Education:*

1. Object of Nutrition Education.
2. Planning of nutrition education for different groups *e.g.* Village Level Workers, School Teachers, Gram Lakshmis, Members of Youth and Women's Organisations and Members of Panchayati Raj Institutions etc.
3. Effective methods for nutrition education.
4. Use of surveys and their findings as basis for planning nutrition education.

IX. *Execution of Applied Nutrition Programme:*

1. Objectives of Applied Nutrition Programme.
2. Content of Applied Nutrition Programme.
3 Operational details of the Programme.
4. Groups to be involved in promoting the programme and their training *e.g.* Yuvak and Mahila Mandals.
5. Role of (*a*) Participating Agencies in ANP at the village, block, State and Central levels (b) Functionaries at various levels and their training.
6. Role of International Agencies engaged in promotion of ANP.
7. Importance of team approach at various levels.

N.B.—The working Group was of the view that about 12 days should be devoted to general orientation in the light of the revised syllabus. The remaining 2-3 days should be devoted to emphasise the role of the subject-matter Instructors both in regard to training programmes and implementation of the Applied Nutrition Programme in the Block attached to their Centres. For this purpose the trainees may be divided into sub-groups, if need be, and given an opportunity to reflect on and discuss their particular task in the programme under the guidance of subject-matter specialists drawn from the parent institutions, conducting the programme of training at the Regional Centres.

APPENDIX II

Training Data in respect of subsidiary State Projects, Plants of Operations for which have been duly signed or are under final stage of negotiation

State Projects	Total number of persons required to be trained	Total number of persons already trained	Balance to be trained or under training	Total UNICEF commitment for stipendiary assistance $	Amount advanced by UNICEF upto 30 September 1965 $	Balance of stipendiary assistance available $
A. *Training Data in respect of State Projects initiated prior to the Master Plan:*						
Andhra Pradesh, I phase	1,724	1,300	424	46,000	16,108	29,892
Madras, I phase	4,040	2,477	1,563	15,000	7,407	7,593
Orissa, I phase	1,524	2,117	..	41,430	33,176	8,254
Uttar Pradesh, I phase	3,338	1,205	2,133	24,590	23,029	1,561
Sub-Total (A)	10,626	7,099	4,120	127,020	79,720	47,300
B. *Training Data in respect of State Projects which are under implementation since 1963-64:*						
Punjab	8,799	849	7,950	50,000	..	50,000
Himachal Pradesh	1,384	1,386	..	9,589	..	9,589
Kerala	1,348	477	894	20,000	..	20,000
Madhya Pradesh	5,324	627	4,703	46,757	3,825	42,932
Mysore	2,962	1,055	2,440	21,000	..	21,000
Orissa, II phase	3,593	3,042	1,539	55,400	..	55,400
Uttar Pradesh, II phase	17,905	11,416	7,437	170,110	19,453	150,657
West Bengal	6,953	167	6,786	53,539	2,100	51,439
Sub-Total (B)	48,268	19,019	31,749	426,395	25,378	401,017
C. *Training Data in respect of State Projects initiated during 1964-65:*						
Bihar	1,379	32	1,347	21,710	..	21,710
Delhi	678	..	678	7,510	..	7,510
Maharashtra	3,864	1,776	2,088	44,868	..	44,868
Rajasthan	2,128	145	1,983	19,165	..	19,165
Sub-Total (C)	8,049	1,953	6,096	93,253	..	93,253
Grand Total	66,943	28,071	41,965	646,668	105,098	541,570

Note.—Only such figures as are authentically available from the State Governments have been taken into account in reporting actual number of persons having completed training. Some State Governments have trained certain additional personnel not provided in the Plan of Operations, that explains the difference the balance between those to be trained and those actually trained.

APPENDIX II—*Contd.*

Statement showing number of persons trained under the first phase Expanded Nutrition project initiated Prior to the Master Plan

Category of Trainees	Andhra Pradesh	Madras	Orissa	Uttar Pradesh	Total
1. State Level Officers	..	..	3	..	3
2. Training Institution Staff	..	32	..	28	60
3. Medical and Health Personnel	92	..	64	..	156
4. District Level Officials	..	11	..	50	61
5. Block Level Officials	20	532	..	180	732
6. Mukhya Sevikas	14	..	32	--	46
7. Gram Sevikas	..	..	110	..	110
8. Village Level Workers/Gram Sevaks	..	298	188	297	783
9. School Teachers	173	63	120	..	356
10. Non-officials	..	218	..	247	465
11. Women's Club Members	149	221	560	403	1333
12. Youth Club Members	..	73	..	..	73
13. Gardeners	..	461	..	..	461
14. Poultrymen	525	375	560	..	1,460
15. Fishermen	327	193	480	..	1,000
Total Trained	1,300	2,477	2,117	1,205	7,099

APPENDIX

Statement showing details concerning training of personnel under the Applied

Category of trainees	Himachal Pradesh			Kerala			Madhya Pradesh			Mysore		
	1	2	3	1	2	3	1	2	3	1	2	3
Report for the period ending	31-12-64			30-9-65			30-9-65			30-9-65		
State Nutrition Officer.	1	1	...	1	...	1	1	1	...	1	...	1
State Level Officers .	...	...	...	11	3	8	11	4	7	3	...	3
District Level Officers.	...	...	...	23	16	7	108	35	73	...	44	...
Principals Trg. Institutions. . . .	...	...	...	4	2	2	...	...	...	5	...	5
Instructors/Instructresses of Trg. Centres	11	13	...	14	20	...	105	64	41	21	30	...
Block Level Officers .	...	...	...	25	30	...	81	45	36	30	17	13
Medical Officers I/c. PHCs . . .	3	3	...	8	...	8	9	15	...	6	...	6
Other Para-medical personnel . . .	24	24	...	92	...	92	54	18	36	44	...	44
Mukhya Sevikas .	70	70	...	5	8	...	18	...	18	...	...	...
Gram Sevikas . .	...	...	...	25	34	...	...	...	...	36	19	17
Gram Sevaks . .	30	30	...	50	48	2	90	...	90	60	60	...
Other village level functionaries . .	...	...	...	10	7	3	...	...	...	...	...	...
School Teachers .	120	120	...	50	50	...	830	...	830	100	110	...
Non-Officials:												
Heads and Members of elective bodies in the operational areas. .	330	330	...	70	61	9	297	...	297	241	73	168
Women's Club Members	300	300	...	100	100	...	315	...	315	1000	57	943
Gram Lakshmis .	75	75	...	100	...	100	90	...	90	...	91	...
Youth Club Members.	300	300	...	110	98	12	315	...	315	300	175	125
Other Villagers . .	...	...	...	...	...	...	...	...	...	...	379	...
Poultrymen . .	...	...	...	500	...	500	2500	322	2178	710	...	710
Gardeners . . .	...	...	...	...	...	...	200	...	200	255	...	255
Fishermen . .	120	120	...	150	...	150	300	123	177	150	...	150
TOTAL .	1384	1386	...	1348	477	894	5324	627	4703	2962	1055	2440

Note.—Below the names of States, the three column denote:

Column 1—Total number of persons to be trained as per subsidiary State Plan.
Column 2—Total number of persons having completed training within the stated period.
Column 3—Balance number of persons to be trained or under training.

II—*Contd.*

Nutrition Programme in respect of State Projects which are under implementation 1963-64

Orissa			Punjab			Uttar Pradesh			West Bengal			Category of Trainees
1	2	3	1	2	3	1	2	3	1	2	3	
31-7-65			30-6-65			30-9-65			30-9-65			Report for the period ending
1	1	...	1	...	1	2	1	1	1	1	...	State Nutrition Officer
1	...	1	5	...	5	40	10	30	3	...	3	State Level Officers
13	13	...	160	26	134	207	277	...	120	...	120	District Level Officers
...	...	...	9	...	9	23	25	...	...	...	...	Principals Trg. Institutions
30	43	...	44	9	35	178	213	...	59	20	39	Instructors/Instructresses of Trg. Centres.
200	227	...	180	70	110	203	301	...	70	...	70	Block Level Officers
12	52	...	20	1	19	29	8	21	10	6	4	Medical Officers I/c. PHCs
100	38	62	140	73	67	145	116	29	40	28	12	Other Para-medical personnel.
50	86	...	20	16	4	...	35	...	10	7	3	Mukhya Sevikas
126	163	...	100	13	87	145	168	...	50	20	30	Gram Sevikas
...	233	...	220	23	197	290	489	...	120	58	62	Gram Sevaks
...	...	...	...	...	...	...	53	...	...	...	...	Other village level functionaries.
450	404	46	800	20	780	880	1112	...	1040	...	1040	School Teachers
												Non-Officials:
...	278	...	2000	50	1950	2743	1328	1415	3120	...	3120	Heads and Members of elective bodies in the operational areas.
1260	373	887	1200	504	696	4640	1910	2730	520	...	520	Women's Club Members
...	...	...	1200	...	1200	725	534	191	...	...	...	Gram Lakshmis
...	...	...	800	...	800	4640	1664	2976	200	...	200	Youth Club Members
...	...	...	...	...	...	...	...	...	...	...	...	Other Villagers
...	...	...	700	...	700	2335	2536	...	570	20	550	Poultrymen
450	327	123	800	...	800	...	...	...	500	...	500	Gardeners
900	480	420	400	44	356	680	636	44	520	7	513	Fishermen
3593	3042	1539	8799	849	7950	17905	11410	7437	6953	167	6786	TOTAL

APPENDIX II—*Concld.*

Statement showing details concerning training of personnel under the Applied Nutrition Programme in respect of State Projects initiated during 1964-65

Category of trainees	Bihar			Delhi			Maharashtra			Rajasthan		
	1	2	3	1	2	3	1	2	3	1	2	3
Report for the period ending	30-9-65			30-9-65			30-9-65			30-9-65		
State Nutrition Officer	1	..	1	1	..	1	1	..	1	1	..	1
State Level Officers	10	4	6	6	..	6	4	..	4	31	..	31
District Level Officers	35	16	19	..	..	..	120	77	43	62	..	62
Principals Trg. Institutions	15	..	15	..	..	..	13	12	1	10	..	10
Instructors/Instructresses of Trg. Centres	68	12	56	..	..	..	82	24	58	26	13	13
Block Level Officers	40	..	40	32	..	32	96	84	12	48	..	48
Medical Officers I/c. PHCs.	8	..	8	..	..	..	12	..	12	12	2	10
Other Para-medical Personnel	64	..	64	5	..	5	88	..	88	72	..	72
Mukhya Sevikas	8	..	8	20	..	20	72	29	43	..	..	..
Gram Sevikas	40	..	40	..	..	..	..	..	..	..	..	..
Gram Sevaks	130	..	130	40	..	40	200	145	55	120	70	50
Other Village level functionaries	..	..	..	..	..	..	..	..	..	..	..	..
School Teachers	160	..	160	40	..	40	120	116	4	240	75	165

Non-Officials:												
Heads and members of elective bodies	160	..	160	120	..	120	192	136	56	464	..	464
Women's Club Members	80	..	80	60	..	60	612	..	612	148	..	148
Gram Lakshmis	80	..	80	..	..	..	..	..	...	..	..	..
Youth Club Members	160	..	160	40	..	40	612	184	428	300	...	300
Other Villagers	..	..	..	..	..	..	..	..	..	..	..	..
Poultrymen	320	..	320	154	..	154	1200	960	240	544	..	544
Gardeners	..	..	..	120	..	120	..	..	—	...	—	..
Fishermen	..	..	..	40	..	40	40	9	31	50	..	50
TOTAL	1,379	32	1,347	678	..	678	3,464	1,776	1,688	2,128	160	1,968

Note.—Below the names of States, the three columns denote:

Column 1—Total number of persons to be trained as per subsidiary State Plan.

Column 2—Total number of persons having completed training within the stated period.

Column 3—Balance number of persons to be trained or under training.

BACKGROUND PAPER NO. 2

TEACHING AIDS AND MATERIALS FOR APPLIED NUTRITION TRAINING

Barbara M. Purvis FAO Nutritionist

A. *Some basic assumptions regarding the ANP*

(*i*) The programme is essentially educational. Its fundamental aim is to improve the well-being of the village families. It hopes to achieve this by teaching them to help themselves towards better nutrition through, for example, kitchen gardening, making better use of available foods and learning to use unfamiliar foods.

(*ii*) A training programme is carried out to prepare workers at all levels for their part in the programme. The training is principally of two types:—

(*a*) the education and training suited to the needs of senior staff, administrative, technical and teaching, at State and District levels and in training institutions.

(*b*) the training suited to the needs of those who work at block and village levels, and on whom will depend the ultimate responsibility for influencing rural people.

(*iii*) It would, therefore, appear that training materials may be necessary for both of these main categories of training. There are many other situations for which teaching aids and materials would be useful. They could be used, for example, in helping to teach the villager or in giving publicity to the programme. These notes, however, deal mainly with materials for training courses.

B. *Some basic assumptions regarding teaching aids and materials*

(*i*) Teaching materials should be seen as *aids to learning* since learning is the process with which we are primarily concerned in any educational or training situation.

(*ii*) Learning is a complicated process and it is, therefore, difficult to define. Most educators would, however, agree that the process of learning involves *change or modification of behaviour*.

(*iii*) If effective learning is to take place there are a number of characteristics which must be recognised including the following:—

(*a*) learning has more meaning and is more effective when the learner has definite aims.

(*b*) because each learner is a unique person, the process of learning varies depending upon the individual, his needs, interests, attitudes, etc.

(*c*) learning is an active process and success depends largely upon the learner. The teacher may help or stimulate but in the end the learning depends upon the learner himself.

(*iv*) If teaching materials are, therefore, going to aid learning they must only be prepared after recognising these characteristics in each learning situation.

CHARACTERISTIC	APPLICATION TO A.N.P. TRAINING: SOME POINTS FOR CONSIDERATION
The learner must be suitably MOTIVATED.	It is essential that the basic aims of the programme are clearly understood. It may be desirable that this process is begun before the trainee begins his training course. He is then able to concentrate during the training on learning his role and the skills necessary for carrying it out. He must be shown, however preferably in the fields, what the Programme involves. In other words, he must be shown some good examples of what he too can achieve or improve upon after his training, through his participation in the Programme.
The learner is UNIQUE	. Should any materials be provided on an all-India basis or are, for example, the differences between areas sufficiently great to make it desirable to have all materials produced by individual States? If a range of materials could be produced by each State would it be possible to indicate in general terms the types of materials most suitable leaving the States free to produce items particularly oriented to local needs?
The learner is ACTIVE	. Learning is not only memorising facts but is concerned with the modification of behaviour by, for example, the application of these facts. It is especially important to appreciate this in the case of a programme such as the ANP which aims at helping people to modify their habits.
	If the trainee is to be concerned with administrative aspects of the programme he must be given an opportunity to study typical situations, plan for them and, ideally, try to carry out his plans. If, on the other hand, the trainee is to be mostly concerned with, for example, the planning and implementation of educational campaigns then he must have an opportunity of practising this activity.
	The most effective aid to learning is DIRECT EXPERIENCE. Seeing a film about the ANP may the interesting and instructive but it is no substitute for visiting an area where all aspects of the programme may be studied in action. Watching a filmstrip on cooking by improved methods may be a useful introduction to the subject but it will not give the audience any competence in the methods shown nor in the skills necessary to teach these methods to the villagers.

C. *A consideration of aids and materials which may be necessary*

Bearing in mind the foregoing points, consideration should be given to the need for providing teaching aids and materials to strengthen the training given in connection with the ANP. The following appear to be the major areas covered during training courses:—

(*i*) the Programme in general; its scope and objective

(*ii*) the understanding of elementary nutrition—good health through good food habits—which is essential for everyone involved in the programme.

(*iii*) the analysis of local needs and planning for dealing with them appropriately.

(*iv*) methods of implementing the programme

(*v*) the roles of those involved in the programme

(*vi*) the technical skills necessary for workers on different aspects.

There are, of course, many different types of aids to learning. Of these the most effective is the direct experience. The relative value of the different types of aids can be most effectively shown by means of the "cone of experience"

Verbal symbols *e.g.*, written material

MOST ABSTRACT (Therefore least impact)

Verbal Symbols	*e.g.*,	written material
Visual Symbols	*e.g.*,	graphs, charts
Pictures, Recordings	*e.g.*,	posters, a khadigraph
Motion Pictures	*e.g.*,	a film
Exhibits	*e.g.*,	a display of local foods which are rich in an essential nutrient.
Field Trips	*e.g.*,	studying a specific aspect of the programme in action.
Demonstrations	*e.g.*,	the "demonstration" provided by those of influence practising the principles of sound nutrition. A well used filmstrip.
Dramatic Participation	*e.g.*,	role-playing in learning how to handle teaching situations.
Contrived Experiences	*e.g.*,	giving a practise lesson to a group of fellow trainees.
Direct Experiences	*e.g.*,	carrying out some nutrition education in the villages and following it up.

MOST DIRECT (Therefore most impact)

D. *Aids and materials which are available*

A survey is at present being made by the FAO Nutritionist of those aids to learning about nutrition which are available in India. This will follow the pattern of the survey of films and filmstrips on nutrition which was produced in 1965. Both surveys deal with nutrition in general and cover items produced by commercial undertakings as well as by Government and International Agencies.

The following items are amongst those which have been produced specifically for the ANP:—

(*i*) Applied Nutrition Programme .	Produced by Ministry of Information and Broadcasting for the Ministry of Community Development and Cooperation.

(*ii*) A number of State Governments have produced pamphlets and posters for use in connetion with the ANP. In some States the Extension staff have produced materials which deserve wider use (*e.g.*, the posters produced in Trivandrum Block, Kerala).

(*iii*) Training institutions connected with the programme have produced materials appropriate to local needs and with excellent impact. (*e.g.*, posters produced by Shri Avinashilingam Home Science College, Coimbatore and the Department of Nutrition, M.S. University of Baroda.)

To aid this type of development provision is made for the supply of various items to training institutions connected with the ANP. This includes a supply of paper, colours, stencils and various tools and materials necessary for making teaching aids. Duplicating equipment may also be obtained. Consideration could perhaps be given to the provision of guidance on the effective use of these materials.

(*iv*) The applied Nutrition Programme in India.	Produced by FAO in consultation with the Ministry of Community Development and Cooperation WHO and UNICEF.
The Applied Nutrition Programme	Ministry of Community Development and Cooperation and published by UNICEF.
Why eggs are good for you .	FAO, published by UNICEF
ANP News letter . . .	FAO.
Pamphlets on School Gardens .	FAO Adviser, published by Deptt. of Agriculture, Andhra Pradesh.
Handbook for Poultry Officers in India (Revised edition)	FAO Adviser, published by UNICEF.

(All of this material is in English).

In addition a number of other background papers have been prepared by FAO Advisers on specific aspects of the Programme of interest to certain trainees.

Other written material is in the course of production. Two leaflets in Hindi, "Be Healthy" and "Healthy Children" are currently under production by Literacy House with advice from FAO. These are intended more for use in the education of villagers than in training courses but may serve as examples to the State Governments of the type of material which may be useful for neo-literates.

A filmstrip entitled "Poultry" is being produced by UNICEF in collaboration with FAO. Work has begun on another filmstrip on elementary nutrition. A film entitled "Food for Thought" on the Expanded Nutrition Programme in Orissa was made by UNICEF in 1962.

E. *Some suggestions for future provision of teaching materials*

Notwithstanding the importance of direct experiences and of the impact of the personal contact in teaching by such means as example and demonstration there is still some place for teaching materials.

(*i*) One of the first steps to take to arouse interest in any scheme is to provide suitable publicity. Similarly, in order to motivate the workers in an educational programme they need to be shown *what* can be achieved and *how* this can be done.

One way of helping to achieve these two goals would be by using a film or filmstrip. These could be particularly useful during training courses in order to show the effect created when the programme is operated in all its aspects in one area. It can be very difficult to communicate this idea just by talking about ANP. It is rarely possible during a training course to show all aspects of the programme in one area and yet this is what is needed in order to encourage their proper establishment by the trainees when they return to their own areas.

It is, however, considered that there are a number of disadvantages inherent in the making of a film and many of these were evidenced in the films seen at the shows recently organised to study the work of different documentary producers. These included:

(*a*) the problem of making a film suited to a specific audience;

(*b*) the problem of effectively putting over a clear, simple message in a way which is appropriate to the audience in mind;

(*c*) both of these problems should be viewed in relation to the ANP which is itself a complex programme involving many different people in a multitude of activities. Even if the audience is considered to be purely that of, say, persons under training, it will prove difficult to isolate one message sufficiently in order to give it the maximum possible impact and thus make an effective film.

Some other points should also be considered relating to the practical aspects of the subject—

(*a*) to make a 1000 ft. film (7—10 minutes) costs between Rs. 20,000 and Rs. 40,000 in black and white and between Rs. 30,000 and

Rs. 55,000 in colour. This does not include the cost of the prints which is approximately Rs. 25 each in black and white and Rs. 60 each in colour.

(*b*) the time factor must be considered because, if the material is needed for training courses, it would be desirable for it to be made available as soon as possible. The length of time quoted by the different units is about 4 months but, on the basis of others' experience, this seems to be over-optimistic.

(*c*) showing a film requires much more elaborate equipment and a more skilled operator than does a filmstrip. If not handled expertly it is easily damaged and then losses some of its appeal.

(*d*) the film would have to be made in such a way as to appeal to all areas and, therefore, people in each area would be able to criticise aspects which seemed inappropriate to them. Several filmstrips could be made, suited to different areas of the country, much more easily, quickly and cheaply than could a film.

(*ii*) In order to make the maximum impact the idea of producing a package of related materials could be explored. For example, this could include:—

(*a*) a filmstrip on the ANP *e.g.*, showing the impact on a family.

(*b*) a series of filmstrips on the role of certain institutions in the implementation of the ANP *e.g.*, the school, the Mahila Samiti.

(*c*) illustrated scripts for the strips.

(*d*) a series of flash-cards using the pictures from the filsmstrips and incorporating teaching notes.

While the first filmstrip could be used at all levels of training the other strips and cards could be used as reinforcement at the lower levels (*e.g.*, for training the Village Level Workers) and could also be used in the village to selected groups (*e.g.*, the Mahila Samiti).

(*iii*) In conclusion one point must be emphasised. The further production of teaching materials for use in training courses should only be undertaken after some consideration has been made of what is required of *all types* of materials. It is only then that priorities in the use of time and money can be established.

BACKGROUND PAPER NO. 3

FOODS & NUTRITION CONTENT IN THE BASIC COURSES OF EXTENSION TRAINING

(*Present Programme*)

Mrs. S. Dantyagi, Joint Director, Directorate of Extension Training, Ministry of Food, Agriculture, Community Development and Cooperation

Objective :

To study to what extent Applied Nutrition Training Programme can be incorporated with the Nutrition content of Basic Training to strengthen the total programme.

Introduction:

The Applied Nutrition Programme, since its implementation in a few pioneer States, only about three to four years ago has met with significant success and has now gained a place of priority in all the State Plan Schemes. In the Fourth Plan period it is proposed to extend the programme in 1,000 Blocks, with an approx. population coverage of 66,000,000. This is an ambitious target of quantity and quality before us, calling for a balanced team of qualified personnel to meet the challange.

In order to be able to plan for the furtherance of the programme and closely coordinate it with the activities of Extension Training it would be helpful as an initial step—to consider the Applied Nutrition Programme executed so far and its impact on the villages.

The three fold objectives of Applied Nutrition Programme—*viz.* Production, Education and Consumption are now well known. Farm families are encouraged on a self-help basis to produce protective foods, educated in better eating habits and training is given to various categories of Extension Workers and allied Govt. personnel on better Nutrition. Thus education, may be considered to be the corner stone of the Programme.

To assist in "twinning" the Applied Nutrition Training Programme with the basic training in Foods & Nutrition for different levels of extension personnel, it would be worthwhile to have a closer look at the Foods & Nutrition syllabus now followed in the Extension Training Programme, such as —nutrition in the basic pre-service and in-service training programme of Gram Sevikas & refresher courses for Instructresses in Gram Sevika Training Centres.

Food & Nutrition in Pre-service [*Course for Gram Sevikas* (1 *year*)]:

In the Training Programme for Gram Sevikas the subject on Foods & Nutrition holds an important place in the curriculum. Since the inception of the Home Extension Training Programme about a decade ago, the syllabus has been revised from time to time to meet the growing demands and needs of the times. The syllabus was again revised at the National Seminar in 1964 and in view of the present emergency, a greater weightage (*viz.* 55%) was given to Improved Agricultural Production and Food and Nutrition. This syllabus is being followed at present.

The core syllabus in Foods & Nutrition covers the following topics to include both the theory as well as practice.

The main *objectives* are:—

(1) Planning & preparation of healthy and nutritive diets for the family within the available resources.

(2) Proper understanding of Applied Nutrition Programme and the role of Gram Sevikas in its implementation.

(3) Preservation of food.

I. *Principles of nutritive dietetics:*

(*a*) Relation of nutrition to health,

(*b*) Principles of food constituents, their functions, requirements and effects of deficiencies,

(*c*) Principles of balanced diet,

(*d*) Effects of under-nutrition and over-nutrition.

II. *Local Foods:*

(*a*) Study of local diets and food habits.

(*b*) Selection of foods with maximum nutritive value within the available resources.

(*c*) Diets for children and adults.

(*d*) Diets for pregnant and nursing mothers.

(*e*) Foods for the infants.

(*f*) Diets for the sick.

(*g*) Planning menus for special occasions like feasts, entertaining guests etc.

III. *Cooking Foods:*

(*a*) Proper methods of cooking different foodstuffs.

(*b*) Introducing new methods of food preparation such as cooking vegetables without throwing away the water, cooking rice without straining, etc.

(*c*) Economic use of food stuffs by using left-overs and shells, skins, stems, etc. of vegetables generally thrown away.

(*d*) Sanitary handling of food.

IV. *Preserving foods:*

(*a*) Causes of food spoilage, food poisoning and its prevention.

(*b*) Simple methods of food preservation such as drying, salting, pickling, sugaring, bottling, canning, etc.

V. *Community Nutrition:*

(*a*) Introduction of cheap and nutritious recipes.

(*b*) Helping children in acquiring good dietary habits.

(*c*) Food substitutes and supplements to the local diets, *e.g.* the use of groundnut in various ways.

(*d*) Use of the produce of the kitchen garden for better diets.

(*e*) Applied Nutrition Programme and Gramsevika's role in promoting the programme *e.g.* mid: day meals, menu planning for vulnerable groups.

In Agriculture and Allied Subjects and slant towards Applied Nutrition Programme is as briefly indicated below:

(1) *Horticulture and vegetable gardening*

Theory and Practice—30 *hrs.*

(*a*) Important vegetables of the area—Perennial, seasonal & biennial and their cultivation.

(*b*) Cultivation of fruit trees, *e.g.*, papaya, lemon, amla, citrus fruits etc. —their nutritive and economic value.

(2) *Dairy Farming*

Theory and Practice—10 *hrs.*

(*a*) Importance of feeds.

(*b*) Preparation of milk products like dahi, butter, ghee etc.

(3) *Poultry Rearing*

Theory and Practice—30 *hrs.*

(*a*) Important breeds of poultry for eggs and table production.

(*b*) Selection & culling of poultry.

(*c*) Natural & artificial incubation.

(*d*) Breeding & rearing of chicks.

(*e*) Feeding & Mixing of feed.

(*f*) Intensive & semi-intensive type of poultry keeping.

(*g*) Common diseases, defertilization of eggs.

(*h*) Marketing of eggs & poultry.

(4) *Fisheries* (wherever possible)—rearing *fish for the family.*

The basic syllabus while keeping to the core fosters a flexible approach and allows for suitable changes according to local needs in the various States.

Moreover, as a part of their practical training, the trainees are required to live in the "Home Management Cottages", where they prepare balanced meals and make use of the vegetables and greens from the cottage kitchen gardens, which they maintain.

Furthermore, it may be mentioned, that it has been the continuous endeavour to make the training programme for Gramsevikas more "Job-oriented and Programme Related", so that the women-workers can confidently meet the challenges arising in the field. In order to provide intimate knowledge of field activities to the Gramsevika trainees, the Training Centres have taken up intensive development work in adjoining five villages. The programme

of planning and development in these five villages is undertaken jointly by Training Centres and Block staff. The staff and the trainees have been working in the five villages and have introduced many important practices in Agriculture, Kitchen Gardening, low cost balanced diets, Home Management, Health & Sanitation, Child-care etc.

It may thus be seen from the above, that a farily adequate and an all-round aspect on Foods & Nutrition is covered in the basic syllabus of the Pre service Training Programme of the Gramsevikas.

Foods and Nutrition in In-service Training Programme for the Gramsevikas (2 months)

The Gramsevikas who have put in three to four years service in the field are called back to the Gramsevika Training Centres for Refresher Courses of two months duration. The main purpose of the programme is to improve the subject-matter content and methodology of Training. Each subject in the In-service Training is correlated with the role of the Gramsevika in the field. No predetermined syllabus is prescribed for this course. The responsibility for formulating the final syllabus for each batch is that of the teaching staff of the respective Gram Sevika Training Centres, who take into consideration the needs of the particular batch of trainees. The "area" of Foods & Nutrition is stressed in all these Refresher Courses and the training is strengthened by using "*Problem and production-oriented approach*".

If it is felt that the nutritional aspect of the Training Programme could be further strengthened, specific suggestions may be made so that it could be examined to fit into the regular In-service Programme. The working group may like to consider:

(1) The preparation of a model plan of work for better nutrition that could be carried out in Applied Nutrition Programme Blocks and also in the five villages attached to the Gram Sevika Training Centres.

(2) How evaluation may be "built in" in the training programme courses.

(3) Taking up (long & short) projects with regard to Applied Nutrition Programme. Fixing the target and time schedule.

(4) Planning a concrete "follow-up" action programme.

(5) Methods of Publicity with regard to achievements maae by rural people.

Subject matter Refresher Courses for Instructors of G.S.T.Cs/Mukhya Sevikas.

There are no two questions that the standard of any Training Programme depends on the quality of Instructors. In order to maintain, a high calibre of Training at the Gram Sevika Training Centres, it is essential that the Instructoral staff should not only be professionally well trained but also be brought up-to-date on the latest findings of research on various Home Science and Agricultural subjects.

Today, most of the Instructresses are not Home Science graduates, but they held graduate degrees in other disciplines. Since a major part of their training calls for knowledge of Home Science, Agriculture and Extension

Education, they have to be refreshed from time to time in Home Science subjects like needs of Nutrition, Mother Craft, Balwadi organisation with Mother Child Nutrition and selected practices for vegetable gardening etc.

Although these courses are essentially meant for Instructresses, the training course is also extended to include Mukhya Sevikas, since the latter have to supervise and guide Gram Sevikas in the field. So for, fourteen subject-matter courses have been conducted in different Home Science areas/Agriculture and 292 Instructresses/Mukhya Sevikas have been trained. In 8 courses (out of 14) special emphasis was given on Foods & Nutrition. In these courses fundamentals of Nutrition was taught emphasis laid on utilisation of inexpensive protective foods in the village diet, methods of cooking to effect minimisation of loss of nutrients, practice in following rules of hygiene and sanitation in kitchen management and improvisation of kitchen equipment. Planning and growing of kitchen garden has been included to introduce improved nutrition.

The evaluation reports of the courses show that these courses have helped greatly in raising the qualitative aspect of the subject matter programme in the Training Centres.

Furthermore, recognising that integration of subject matter with methodology is of utmost importance at all field workers to offer solutions to the rural families, a two months' training in Extension methods (including techniques of teaching Home Science), Programme Planning and Communication Media is also provided to the staff at three Extension Education Institute set up at Nilokheri, Anand and Rajendranagar.

In addition short concentrated workshops of 4 to 5 days' duration on methods of Teaching and how to prepare teaching materials are conducted for the staff. These are conducted State-wise.

To build up the necessary competance and confidence in the trainers of trainees, *Ability and Depth* form the hallmark of these staff courses.

A summary outline of the staff Refresher Course syllabus in Foods & Nutrition is appended.

The working group may like to consider:—

1. Ways for:

   (*a*) Strengthening Refresher Courses for Instructors on Foods and Nutrition and A.N.P. training to make the two form an integral part of each other.

   (*b*) Developing the programme in a properly phased a planned manner at all levels including the guidance aspects.

2. A follow-up action programme.

3. Suggestions regarding the 'areas' or subjects on which staff Refresher Courses could be organised.

4. Some simple studies or research work on applied Nutrition that may be taken up by the staff.

5. Training of trainers for giving radio-talks, role-playing, and in mass-communication.

APPENDIX

Human Nutrition & Foods—Basic Principles

Value of Kitchen-gardening

OBJECTIVES:

1. To develop an understanding of
   - (a) Principles of Nutrition.
   - (b) Concept of balanced diet.
   - (c) Constituents of Foods.
2. To develop skills in the preparation of diets for—
   - (a) Different age groups (including the vulnerable group).
   - (b) Different Income groups.
   - (c) Special diets.
3. To develop recipes—
   - (a) Using the available food stuffs in a rural setting.
   - (b) In-expensive sources of protective foods.
   - (c) Based on an understanding of food preferences of rural people in the various regions.
4. To develop kitchen gardens—
   - (a) To increase the nutritive value of food.
5. To study the dietary pattern of a selected village and to conduct a Nutrition Educational Programme.

Topics	Contents	Experiences
Scope of Nutrition . .	(a) Importance of the study of nutrition. (b) Importance of nutrition education in Extension work. (c) Relation of Foods & Nutrition to Health (i) Study food values (ii) Functions of the nutrients. (iii) Dietary pattern and the cultural food fads and fallacies.	Lectures and discussions.
The different food constituents:	(a) The purpose of food. (b) The basic food groups in details.	Lectures and discussions.
Proteins, carbohydrates, fats, minerals and vitamins & their functions.	(c) Concept of a complete diet. (d) The functions of carbohydrates, proteins, fats, minerals and vitamins. (e) Sources of the different food constitutents. (f) Daily requirements (what foods do families need).	Conduct practical classes and prepare foods introducing cheaper food-stuffs, high in nutritive value like groundnuts, multipurpose foods, beans, amlas etc. Preparation of teaching aids
Balanced meal (square meal) Daily requirement for different age groups.	Principles of square meals balanced diet) and its importance. Use of the square meal idea to know whether the diet is adequate or not, methods of improving diets using different foods combination.	Cooking of balanced meals for (a) different age groups; (b) different income levels; (c) diet for a pregnant woman; (d) diet for a nursing mother; (f) diet for the pre-school child.

APPENDIX—*Contd.*

Topics	Contents	Experiences
Better utilisation of the resources for meeting nutritional needs. Sanitary handling of foods .	(*a*) The importance and comparative study of the nutritive value before and after germination. (*b*) Methods for utilisation of wastes; (*c*) Methods for preservation of foods; (*d*) Correct cooking methods; (*e*) Supplementing the food by kitchen garden produce.	Develop new recipes from germinated foods. Improved cooking methods to preserve the maximum food values, sanitary handling of foods. Preservation—practical work on. (*a*) dehydration (*b*) pickling (*c*) preserves (*d*) use of home made dehydrated food. Help the home-makers to plan their own kitchen gardens.
Supplementary foods & food substitutes.	Preparation of Ragi malt sprouted gram, Ground-nut butter Ground-nut milk.	Different preparations of sprouted gram, Ragi malt, Ground-nut products for introduction into the daily diet.
Kitchen gardening . .	1. Planning the kitchen garden according to changes in climate and locality. 2. Selection of seeds, preparation of soil, manuring, sowing, irrigation, weeding, harvesting and storing. 3. Utilisation of produce of the kitchen garden.	Raising vegetables according to season. Selection of vegetable for preservation. Selection and extraction of seeds from healthy vegetable fruits. Planting and management of fruit plants in kitchen gardens or guava, papaya, grape-fruits etc. Cooking practices to conserve the nutrients in vegetables.
Poultry Rearing . .	*Selection of Bird* 1. Breeding of poultry. 2. Feeding of poultry. 3. Management of poultry and hatchings of eggs. 4. Housing of poultry. 5. Health and Hygiene, including processing.	Feeding—selection—observe the cleaning of poultry pens—Treatment of birds, handling of eggs.
Dairying	Brief knowledge of salient principles of the sanitation and methods of handling of milk, milk products and milk utensils and equipment in rural development.	Preparation of curds, cream, Khoa, butter and ghee.

BACKGROUND PAPER No. 4

CRITERIA FOR MEASURING THE SUCCESS OF THE TRAINING PROGRAMMES

Dr. Ram Dass
Chief, Nutrition Division, UNICEF

The criteria for measuring the progress of the training programme have to be related with the basic objectives of the Applied Nutrition Programmes which are primarily educational, leading to the effective participation of the communities in the production and consumption of protective foods. The project people are required to have an understanding of the need for consuming balanced diets by utilising their existing resources so that the deficiency diseases may be eliminated and standards of health may improve.

These criteria will be of a *qualitative and quantitative* type both. Qualitative will relate to the interest of the trainees of various categories in the training programme, their participation in discussions, practical exercises, attention to listening to lectures and assimilating them, getting the necessary answers to their problems etc. They will be required to indicate if they have been able to get guidance on the type of problems they are likely to be confronted with while arranging for the training of various categories of workers themselves when they go back to their training centres or to the blocks.

Quantitative measurement will relate to the number of the different categories of workers to be trained, duration of training and performance after the training. In the light of the above broad generalizations, specific criteria will have to be worked out by the workshop in consultation with the instructors, principals and the executives of the training programmes so that guidance may be made available to those who are going to be in charge of the training programmes in the States to assess that their efforts are being directed in the right channels and that they are following the basic tenets and the philosophy underlying these programmes. The subject will generate interest and detailed criteria for evaluating the training programme on both aspects will be worked out by the participants themselves in the light of their experience and discussions.

Background Paper No. 5

NUTRITION IN BASIC PRE-SERVICE OR IN-SERVICE TRAINING —TRAINING OF GRAM SEVAKS AND INSTRUCTORS IN TRAINING CENTRES.

Mrs. S. Dantyagi,

Joint Director, Directorate of Extension Training Ministry of Food, Agriculture, Community Development and Cooperation

Pre-service Training of Gram Sevaks

The National Development Council in its meeting held in November, 1962, took an important decision that in order to boost up agricultural production the Gram Sevaks should concentrate only on Agricultural Extension work. It was accordingly decided to utilise the services of Gram Sevaks only for one set up task, *viz.*, Agricultural Production Programmes. Under these circumstances it was necessary to re-orient the entire training programme so that it catered to the new role which Gram Sevak had to play in the changed circumstances. It was felt that since the Gram Sevak had to devote henceforth 100% of his time to the field of Agriculture and Animal Husbandary alone, 80% of institutional training should be devoted to these two subjects. Elementary knowledge of other subjects was also considered essential because in its absence, it would be difficult to take a coordinated view of the different situations prevailing in the villages. In view of the new concept of the role that the Village Level Worker would be required to play, the syllabus of the two years integrated course was accordingly revised after discussing in great detail in the Conference of Principals and State Level Officers held at Hyderabad in 1963 and later by a small committee at New Delhi. The model syllabus developed covers the broad outline of the various items in the syllabus and leaves the rest to the initiative of the States and Training Centres as these details have to be worked out by the States in accordance with their own requirements. It fosters a flexible approach with a view to allowing variations in the light of individual conditions and needs.

In this training programme he is exposed thoroughly to practical teaching methods related to actual field procedures. However, stress is also laid on the importance of teaching fundamentals of science and theory. The Instructors also see that the Gram Sevak imbibes atleast a minimum of scientific knowledge. The syllabus is handled in such a way that it provides necessary background to the trainees so that they can understand the field operations as quickly as possible, develops the institutional training programme so as to take advantages of the seasonal activities of the Block attached to the Training Centre and determines how and when training in individual items or topics should be imparted. 80% of the institutional training time is being spent on Agriculture (65%) and Animal Husbandry (15%). The present coverage of "Nutrition" in the pre-service training programme of Gram Sevaks is given below:—

Nutrition and Balanced Diet

This falls under the subject Public Health for which 40 hours have been allotted.

Theory : Balanced diet, its importance, local foods available and how they could be used to make balanced diet. Care of food-stuffs. Brief understanding of the Applied Nutrition Programme.

Practicals: Participation in balanced diet programme. Practicals on balance diet. Keeping in view the role of Village Level Worker in the Applied Nutrition Programme which is the production of protective food, adequate subject matter has been provided in the syllabus under Horticulture, Poultry and Fisheries, both Theory and Practicals.

Horticulture:

Theory: 157 hours	Practicals : 90 hours
1. Study of important seasonal vegetable crops of the locality under various heads.	1. Adequate practices in raising vegetable crops, use of garden tools.
2. Preparation of the Plan for popularising vegetable cultivation in the locality.	2. Raising of seeds of important vegetable crops.
3. Laying out orchards—Principles.	3. Taking up kitchen gardening programmes in the villages, through village schools, individuals.
4. Study of cultivation of fruit-crops.	4. Practices in layout of orchards.
5. Community plantation of orchards.	5. Practice in preparation of plans for community orchards. Study of community orchards.

Poultry:

1. Important breeds of poultry for egg and meat production.	1. Identification and handling of important breeds of poultry.
2. Selection and culling of poultry.	2. Practice in culling of poultry.
3. Natural and artificial incubation.	3. Practice in use of incubation.
4. Breeding and rearing of chickens.	
5. Feeding.	
6. Intensive and semi-intensive system of poultry keeping.	6. Study of various types of Poultry Houses.
7. Common diseases.	7. Practice in computing balanced ration for poultry and feeding of farm birds.
8. Marketing of eggs, poultry.	8. Practice in de-fertilisation and preservation of eggs.

Fishery:

1. Types of fish	
2. Development of fisheries in villages.	Identification of fish types.
3. Paddy-*cum*-fish culture.	
4. Fish marketing—preservation of fish.	

As far as the actual participation in balanced diet programme is concerned trainees practise it at the campus while running their own mess.

Refresher Training of Gram Sevaks:

In order to provide up-to-date knowledge in their subject matter knowledge and extension techniques the Gram Sevaks who are in the field are provided with in-service training for a period of 2 months. Each subject in the in-service training is correlated with the role of the Gram Sevak in the field. No pre-determined syllabus is prescribed for this course. For each course the syllabus is developed taking into consideration the needs of the particular batch. However, a model syllabus has been prescribed giving outlines so that these could be suitably modified at each Training Centre. The requirements of refresher training are quite different from these of pre-service training. While organising such courses the following objectives are kept in mind:—

1. To prepare the Gram Sevak to shoulder his new role.
2. To fill up gaps.
3. To keep them abreast of the latest researches in different subject matter and extension techniques.
4. To teach them new subjects which have gained importance.

Keeping in view the objective of the training, a guide syllabus has been drawn. The contents are purely indicative and the responsibility for formulating the final syllabus will be that of the teaching staff for each batch.

Horticulture and Vegetables (Theory):

1. Importance of fruit and vegetable growing—their nutrition value and economic value.

2. Kitchen—community and school gardening.

Public Health:

Nutritive values of the various foods being produced with special emphasis as protective foods and balanced diet. Balanced diet, their preparation and use. Mal-nutrition and effects of food on these conditions—Applied Nutrition Programme—its importance—its contents.

Preparation of hand outs and discussion on this—Practical experience in preparing a balanced diet for the accumulated data.

Instructors in Extension Training Centres:

I. The instructional staff of the Extension Training Centres are provided two-months training at the 3 E.E.Is in Extension Education consisting of basic disciplines such as psychology, sociology, anthropology and economics etc., all synthesised into the body of the subject matter. A tentative broad outline has been prepared reflecting the general structural pattern of course to serve as a basis for discussion and instructional contents are determined largely by the teachers and trainees within this frame work. One of seven main disciplines is Home Science. Under this head, the following topics are covered:

1. Balanced diet—constituents of balanced diet.
   Balanced diet for different age and occupational groups.
   Importance of kitchen gardening.
2. Problems of diet and nutrition in rural areas.
3. Expanded nutrition programme.

II. In order to bring the Instructors in Agriculture and Animal Husbandry up-to-date in the latest technological developments in their subject matter areas facilities for in-service training programmes for these personnel by way of one month subject matter refresher Courses organised at selected and well-equipped Agricultural and Veterinary Colleges and Agricultural Universities. This programme not only provides opportunity to bring them up-to-date in their subject matter areas but also to present their field problems for finding suitable solutions. Since in these courses, Extension Officers (Agriculture and Animal Husbandry) also participate, opportunities are provided to exchange their experiences.

Conclusion:

In view of what has been stated above, it does not seem necessary to add more subject matter in the pre-service training programme of Gram Sevaks. However, if the group considers necessary that additional training in the Nutritional aspect of the programme be strengthened specific recommendations may be made so that it could be examined to fit in the regular in-service training programme.

BACKGROUND PAPER NO. 6.

NUTRITION CONTENT IN THE JOB COURSE FOR MUKHYA SEVIKAS

Paper prepared by Department of Community Development, Ministry of Food, Agriculture, Community Development and Cooperation

The syllabus of the 10½ months Job Course for Mukhya Sevikas, as originally prescribed, did not provide for a comprehensive coverage of the topic of nutrition.

In 1964, the three Regional Workshops on Training reviewed the entire question with special reference to agricultural production programmes and the need to orient Women's and Children's Welfare activities, more closely to present day requirements. Consequently, an addendum to the syllabus was issued in April, 1965, which centred on Agricultural, Animal Husbandry and Applied Nutrition Programmes. The topics added under Applied Nutrition were:

I. *Introduction:*

1. Importance of nutrition in maintenance of health.
2. Importance of national health status in production and economic development.
3. Local agricultural, horticultural, socio-economic, nutrition and health problems, based on surveys (where possible).
4. Applied Nutrition Programme as an integrated educational programme dealing with production, distribution and consumption.

II. *Food:*

1. Constituents of food, their functions, causes and effects of their excess and deficiencies.
   (*a*) Carbohydrates.
   (*b*) Proteins (animal and vegetables).
   (*c*) Fats.
   (*d*) Minerals.
   (*e*) Vitamins.
2. Classification of feeds with special reference to locally available foods.
3. Factors affecting digestion and assimilation of foods, such as status of health, intestinal infections, stresses, rest and relaxation, mealtime, environment.

III. *Nutrition requirements:*

1. Meaning of nutritional requirements.
2. Factors affecting nutritional requirements.

3. Nutritional allowance recommended by (ICMR) for
   - (*a*) Adults—Male and female.
   - (*b*) Adolescent boys and girls.
   - (*c*) Pregnant and nursing women.
   - (*d*) Young children.
   - (*e*) Infants.
4. Use and limitation of food Composition Tables.

IV. *Planning Meals:*

1. Planning meals to meet nutritional requirements of individuals, families and groups (with emphasis on vulnerable groups), with due regard to:
   - (*a*) cost;
   - (*b*) availability; and
   - (*c*) customs.

V. *Public Health Aspects of Nutrition:*

1. Under-nutrition and mal-nutrition—contributory factors leading to under-and mal-nutrition.
   - (*a*) Poverty;
   - (*b*) Ignorance;
   - (*c*) Lack of availability and/or wastage and non-utilisation of available resources.
2. Commonly observed nutritional deficiency conditions.

VI. *Food Hygiene:*

1. Hygiene of food handling.
2. Precautions to be taken during storage, processing, handling, cooking and serving of foods.
3. Environmental hygiene safe water supply—protecting food from flies and rats.
4. Some understanding of food legislation and food inspection and problems due to adulteration.

VII. *Prevention of wastage of Nutrition:*

1. Losses of nutrients during harvesting storage and processing including milling, preservation, pre-preparation and cooking of foods.
2. Conservation of nutrients by proper methods of storing, handling, pre-planning and cooking.
3. Some understanding of methods suitable in village conditions for preservation of fruits and vegetables.

VIII. *Methods of approach to change food habits:*

1. Study of local food customs and habits.
2. Importance of relating current scientific knowledge of Nutrition to local conditions and local food habits.

IX. *Nutrition Education:*

1. Object of nutrition education.

2. Planning for Nutrition Education for different groups.

3. Effective methods for Nutrition Education.

4. Use of surveys and their findings as basis for planning Nutrition Education.

X. *Execution of Applied Nutrition Programme:*

1. The content of applied nutrition programme—its philosophy, objectives and operation.

2. International agencies engaged in promotion of Applied Nutrition Programmes.

3. Role of participating agencies in Applied Nutrition Programme at village, block, district, state and central levels.

4. Groups to be involved in promoting the programme and their training
   (*a*) Women;
   (*b*) Youth.

5. Role of functionaries—importance of team approach.

Conclusion:

The revision of the syllabus appears to ensure a full coverage of all the aspects of the Applied Nutrition Programme, with which the Mukhya Sevika is likely to be concerned on the fields. Further examination seems necessary however, to develop techniques for effective communication of new nutrition practices by the Mukhya Sevika to the women in the rural areas.

BACKGROUND PAPER NO. 7.

NEED FOR A CENTRAL INSTITUTE OF STUDY, RESEARCH AND EDUCATION

IN

APPLIED NUTRITION PROGRAMME

by

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Director, Social Education, Department of Community Development

Applied Nutrition is basically as education programme, leading to an effective participation of individuals, groups and communities in the production and consumption of protective foods. The process of education is both direct and indirect. It is direct through the extensive programme of training in nutrition of the elected representatives of people on the Panchayati Raj institutions, members of the Yuvak and Mahila Mandals and the officials of the Block Administration. It is indirect through participation of people in the production of nutritive foods and their effective utilisation for vulnerable groups of expectant mothers and children under the age of four, primarily as a source of demonstration of the usefulness of nutritive food habits. Emphasis on education of people has to be underlined in the promotion of all activities of applied nutrition.

Social Aspects of Nutrition:

Nutrition, in its application is a social activity. It deals with the food habits of people. These habits are based on the concepts, attitudes, beliefs, values and customs of people regarding food. People eat not usually what they like; they eat what they are conditioned to eat through the early age of growth. The food habits of people are influenced by the prevailing social habits in the family, the caste, the religious group and the community. In fact people are born into the 'food-culture' of community to which they belong and conform to it as it is safe for them to follow the prevailing pattern. In a traditional rural society as ours, the social conformation of food practice is more rigid than in urbanised industrial society. Any change in food practices, therefore, has to be built on the old, with gradual introduction, through exposure, to new innovations. Besides, there is considerable variation in foods habits of people residing in different areas of the country, depending on the availability of food products, the traditional cultural norms and the standard of living. Change in food habits, therefore, have to be related to variations that exist in food practices in local communities.

Community Acceptance Necessary:

In a traditional society, any programme of change in social values and habits has to be related, by its very nature, to the acceptance of the local community. Changes in food practices are to be related to the prevailing community norms and are to be accepted by the heads of the joint family, the caste and the local community. It is in this context that the training in A.N.P. of the leaders of the local communities on Panchayati Raj institutions has an important significance. The involvement of youth and women in the

programme is meant to secure further support. The applied Nutrition Programme is also a programme of production and distribution of nutritive food like vegetables, fruits, eggs and fish. For the first time, the distribution programme is directly related to the production programme. The utilisation of the nutritive foods, in the first instance, is by children under the age of four and expectant mothers. Although the primary purpose is the educational demonstration of the use of nutritive foods, it highlights the responsibility of the village community to its venerable groups. The combination of the production, distribution and educational activities for the propagation of the use of nutritive foods and involvement of the members of Yuvak and Mahila Mandals, besides the representatives of people on local Panchayats, make the Applied Nutrition Programme truely a Community Development Programme.

Education and Training in Applied Nutrition Programme:

For such vast programme of Applied Nutrition both extensive and intensive coverage of training is necessary. The training of such a community-wide programme has to be built on the body of knowledge available in various fields. What are the areas of knowledge that could be considered necessary for building a sound base of the training programme in Applied Nutrition? Some of them relate to the following:—

(*a*) Knowledge of nutrition, of the social aspects of developing food habits and of the prevailing 'food-culture' in a given community.

(*b*) Ability to understand the prevailing food practices and their local variations and the skill of initiating new food habits introducing innovations through the creation of awareness and interests in people and guiding them to adopt nutritive foods by trial and evaluation.

(*c*) Knowledge of the methods of production of different nutritive foods including vegetables, fruits, eggs and fish.

(*d*) Knowledge of preservation of nutritive values of different food products and their effective use in practice.

(*e*) Knowledge of the methods of working with individuals, groups and communities and the skill to relate with them effectively for promoting the programme of applied nutrition. This should also include knowledge of the processes of group participation and community involvement.

(*f*) Knowledge of administrative coordination of different aspects of the programme and of inter-relating different activities as one programme.

(*g*) Knowledge of supervision of field workers and local participants. The ability to select local workers and participants to form a compact nucleus of 'involved' group is basic to the stabilisation and propagation of the programme in the field.

(*h*) Knowledge of evaluation of the programme including effective use of different activities and the ability to readjus the prorgamme and its activities to suit the changing needs of people. The

knowledge of advancement of food technology through research and study and the ability to adopt the innovation to suit the receptivity and needs of people is necessary in a technological age.

An integrated understanding of all these areas of knowledge and practice is necessary to stimulate the training programme of field and supervisory workers. The contents of training for each group of field and supervisory workers has to be sorted out to meet the requirements of their role and responsibilities on one hand and their ability to acquire knowledge of the programme on the other. The difference between educational and training programme also has to be examined and maintained. The very programme of applied nutrition should become an integral part of the system of education for workers belonging to different professions. The education programme of doctors, health visitors, mid-wives, home-economists, educationists and social workers will have to contain some aspects of applied nutrition in their professional courses. Besides this, the inservice training programmes of gram sevaks and gram sevikas, the social education organisers and mukhya sevikas and other concerned extensive workers should have adequate contents on the subject of applied nutrition. The programme of applied nutrition is basically interdisciplinary in its contents. The body of knowledge available in various disciplines have to be analysed and inter-related to make the programme of training effective. It is for this reason that even after incorporating the subject of nutrition in different professional courses, there will remain a need for organising short job orientation courses in A.N.P. for different functionaries active with the programme. These activities of developing the required body of knowledge in different aspects of the programme and sorting them out for different educational and training activities of a large number of field workers cannot be carried out with insight and efficiency in an *ad-hoc* manner. Only an ongoing institute with traditions of learning and field practices can take up the responsibilities with a measure of justification.

The Present Ad-hoc Training Programme

As indicated in the Master Plan, the first phase of the training programme covered the strengthening of facilities for the presentation of practical courses in poultry management, dairying, fisheries, horticulture and home science and in the teaching of applied human nutrition in selected number of training institutes such as Gram Sevak and Gram Sevika Training Centres, Social Education Organisers' Training Centres and other situated adjacent to the Community Development Blocks selected for the promotion of Applied Nutrition Programme. For organising the training of instructors of these institutes and other supervisory staff, the services of three Home Science Colleges were utilised. This programme by its very nature was *ad-hoc*. This was inevitable in the initial stage of the programme. After gathering experience for a number of years, some more permanent arrangement has to be worked out.

The Master Plan visualises as a second phase permanent training facilities in applied human nutrition established in Agricultural Colleges, Colleges of Veterinary Science, Home Science Colleges, appropriate health institutes and other training institutions so that the desired nutrition bias may be built into the curriculae of these institutions which turn out personnel who have much to do with rural communities.

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Need for a Central Institute:

The second phase of the training programme is well conceived although it suffers from certain limitations. As indicated earlier, it is necesary to build the very contents of the Applied Nutrition Programme in the curriculae of various professional courses and in-service training programmes so that they become an integral part of the equipment of the concerned field workers. At the same time in the absence of a central institute of study and research, the educational and training programmes are likely to remain inadequate. At present there exist no institute with traditions of research and education which can provide the 'leadership of thoughts and ideas' in the field of Applied Nutrition. Such an institution allied with others having similar interests as Central Food Technological Research Institute and National Nutrition Research Laboratory can, in cooperation with the existing training centres for different field workers, fulfil the onerous task of developing as inter-disciplinary body of knowledge for furthering the programme of applied nutrition.

The present limitation of the programme in the field in terms of (a) inadequate understanding of the varying food habits of people and of the methods of introducing new innovation in food-practices, (*b*) lack of knowledge of the economics of the total programme and its each unit of activities resulting in the inability to make the production programme viable, (*c*) limited insight in the dynamics of group participation and community organisation in promoting various activities of production and distribution of nutritive foods, (*d*) conflicting claims of educational and welfare objectives of the programme promoted in economically backward groups and communities, (*e*) limitation of organisational development, specially in coordinating the activities of different departments and (*f*) inability of giving adequate supervision of field workers could be traced to the absence of an institution to examine these and other questions on an ongoing basis with field research and investigation. Any effort to deal with such emerging problems on an *ad-hoc* basis, as is done today, is likely to leave the programme weak. Only a central Institution with a strong base of applied research can meet with the situation.

Production of Literature and A.V. Aids:

Besides this, there is an urgent need for systematising the production of suitable literature on Applied Nutrition Programme for the use of field workers and the local participations. Unless a steady flow of suitable literature and of audio visual aids is maintained, the momentum of the programme is likely to suffer. The present effort to produce literature by individual efforts, although useful, leaves much to be desired. There is an urgent need for a Literature Production wing attached to the Central Study, Research and Education Institute in Applied Nutrition Programme. The contents of the literature have to be based on field studies, survey and evaluation. A system of feeding the Literature Production Wing with suitable material has to be worked out on a permanent basis. The literature, so produced, should relate to the requirements of the field workers, members of the associate organisations and the rural communities.

Responsibilities of the Central Institute:

To sum up, the responsibilities of the Central Institute of Study, Research and Education in Applied Nutrition Programme should be to study the field problems and to provide assistance to the field workers through

training, guidance and literature. The primary focus should be to provide leadership of ideas in the field of Applied Nutrition by co-relating the knowledge and experience available in different disciplines of studies concerned with the programme. The institute should have adequate staff for research, training and production of literature on the subject. They should be drawn from different disciplines of Nutrition, Medicine, Sociology, Anthropology Social Work, Home Science, Agriculture, Veterninary Science, etc. As work at such an institute has to be inter-disciplinary, the staff should have the ability to work with people belonging to other disciplines.

The institute as visualised above, will have to develop its own area of competence and traditions. The programme of applied nutrition as promoted is new in the field of knowledge and practice. It has to develop its ownbody of knowledge and experience. Such an institute, if staffed with care and provided with facilities of development, can certainly supply the much needed leadership of ideas and innovations, thereby giving depth and stability to the total training programme.

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